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ABSTRACT

The Library of Educational Documentation in Florence, Italy began work in 1980 on the establishment of an educational documentation system for Italy. Recognition of its role in this regard was accorded by the Regional Institutes for Educational Research, Innovation and Teacher Training (IRRSAE) and by the European Centre for Education (CEDE) in Frascati. The library envisages itself as a central point to which all organizations, researchers, scholars, and educators who are interested in educational problems can refer, confident of finding useful information and thereby avoiding repetitive research. With the acquisition of a large mainframe computer (IBM 370/148) in December 1981, the library began to establish an independent computerized system for the handling of educational documentation. In order to put this beginning effort on the strongest possible basis, the library decided to hold an international meeting on the subject of educational documentation and to invite speakers from other countries that had operational systems in this area. The proceedings of the meeting were envisaged as an opportunity for analysis and comparison that would benefit the Italian developmental efforts. Some of the major papers presented were: (1) A. M. Furtado, "The Present and the Future of the International Network for Educational Information"; (2) W. F. de Regt, "Eudised, a Decentralised System with a Common Thesaurus"; (3) S. Pissarro, "Information et Education: situation actuelle et perspectives. Le role du Centre National de Documentation Pedagogique (France)"; (4) E. Ekman, "Information on Actual Educational Research in Sweden and on Educational Documentation"; (5) W. E. de Regt, "Educational Policy Documentation in the Netherlands"; (6) A. Gwilliam, "Educational Documentation in the United Kingdom: Developments and Research"; (7) C. Hoover and T. Brandhorst, "Development and Current Status of the Educational Resources Information Center. A Model Bibliographic Control System Covering the Literature of Education in the United States"; (8) G. Biondi, "The Educational Documentation System in Italy: First Steps." (WTB)

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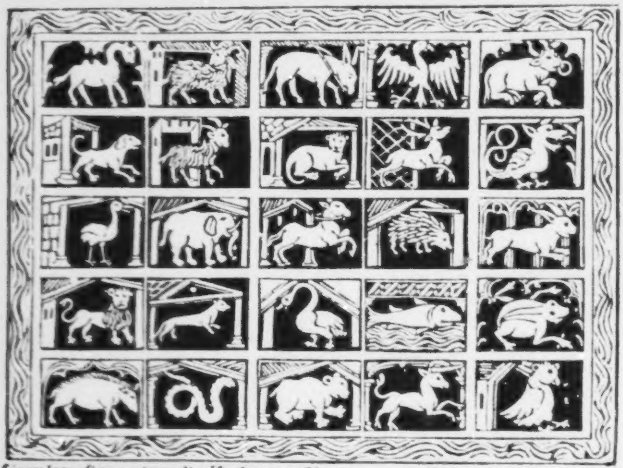

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Educational Documentation
present and future

International Meeting
Florence 31 May - 4 June 1982

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Via M. Buonarroti 10, 50122 Firenze
Tel. (055) 241.187 - 241.188

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INTRODUCTION

The Educational Documentation Library of Florence outlined a feasibility study for the automation of its services from the first months of its existence (1980). This was done in an attempt to respond to the changing circumstances and exigencies of the school and of society in general.

In the second round meeting on July 21, 1981, BDP *was recognized as « that organization specialized in the global collection of pedagogic documentation ». It was also referred to as « a natural reference point for the coordination of initiatives in this field (didactico-pedadogic) ». This recognition was given by the Conference of the heads of the Regional Institutes for Educational Research, Innovation and Teacher Training (*IRRSAE*); by the European Centre for Education (*CEDE*) in Frascati; and by the Library of Educational Documentation (*BDP*) in Florence.*

« A reference point » to which all (organizations, researchers, scholars, educators etc.) who are interested in educational problems can refer with the certainty of finding useful information. A means also of reducing repetitive and frequently useless research.

Towards the end of December 1981, after careful preparation and the evaluation of a number of proposals, work was set in motion to set up a computerized system using an IBM *370/148 with five terminals which will soon be increased to seven.*

An independent computer system was chosen because « of the vastness and complexity of the project », as well as « because of the structural characteristics of this kind of documentation centre »; and finally, because of the specific nature of the software package required.

At the same time, a number of cooperative projects were set up in collaboration with the IRRSAE *and* CEDE, *with the Universities and even with the Ministry of Education. This last was very interested in this new and useful service. The Minister for Education, the Hon. Guido Bodrato, has declared this interest on a number of occasions.*

In the meantime, the Board of Directors of the Library which had undertaken the project of the automation of the services, decided to organize « The International Study Meeting » which took place from May 31 to June 4, 1982 and whose Acts are just now being published.

BDP*'s intention in this meeting was to offer an opportunity for analysis and comparison which would correspond to the widely felt need to begin the systematic organization of information in the field of education for informed and efficient planning in Italy and elsewhere.*

Thus in order to have an in-depth study of the political, technical and economic problems involved in the proper administration of documentary materials, invitations were extended to all major institutions both national and international which have invested intellectual or material resources in this field.

After the positive outcome of the International Study Encounter, blessed by the weather's pleasant change of mood, it is my duty to express publically the heartfelt thanks of BDP *and my own, to all those who have given their support, their collaboration, and their participation:*

— *To Sen. Prof. Giovanni Spadolini, President of the Cabinet;*
— *To the Hon. Guido Bodrato, Minister of Education, who took part in the work of the Meeting and gave the concluding speech;*
— *To Sen. Franca Falcucci, Under-secretary, Ministry of Education;*
— *To H. E. Rolando Ricci, Prefect of Florence;*
— *To Dr. Elio Gabbuggiani, Mayor of Florence;*
— *To Sig.ra Anna Bucciarelli, Assessor for Education, City of Florence;*
— *To Dr. Mario Leone, President of the Regional Government-Tuscany;*
— *To Dr. Marco Mayer, Assessor for Education and Culture, Tuscany;*

- *To Dr. Saverio Avveduto, General Director of Cultural Exchanges, Ministry of Education;*
- *To Dr. Emanuele Caruso, General Director for Technical Education, Ministry of Education;*
- *To Dr. Domenico Fazio, General Director for University Education, Ministry of Education;*
- *To Dr. Roberto Giannarelli, General Director for Professional Instruction, Ministry of Education;*
- *To Dr. Giovanni Rappazzo, General Director for Personnel, Ministry of Education;*
- *To Dr. Sergio Romano, General Director for Cultural Relationships, Ministry for Foreign Affairs;*
- *To Dr. M. Aurelio Sinisi, General Director for Primary Education, Ministry of Education;*
- *To Dr. Francesco Sisinni, General Director for Libraries, Ministry of Cultural Environment;*
- *To Dr. Antonio Augenti, Director of the Office for Research and Planning, Ministry of Education;*
- *To Dr. Elvira Guidi, Regional Superintendent of Education;*
- *To Dr. Baldassare Gullotta, Superintendent of Education, Florence;*
- *To the various Members of the* IRRSAE *and* CEDE *who have taken part;*
- *To the other Authorities and Representatives of the Press who have followed the meeting with lively interest;*
- *To the various teachers who have come from the various regions of Italy and who followed and participated in these intense days in Florence.*

Special thanks are due to the Speakers for the high level of their papers:

- *To Prof. Paolo Bisogno, National Council of Research;*
- *To* Ted *Brandhorst,* ERIC, USA*;*
- *To Dr. W. F. De Regt, Central Documentation Department, The Hague;*
- *To Dr. Elin Ekman, National Library for Psychology and Education, Stockholm;*
- *To Dr. Aida M. Furtado, Bureau International d'Education, Genève;*

— To Dr. Anthony Gwilliam, National Foundation for Educational Research in England and Wales, Slough;
— To Dr. Charles Hoover, ERIC, *USA;*
— To Dr. Simone Pisarro, Centre National de Documentation Pédagogique, Paris;
— To Dr. Giovanni Biondi, Documentation Service of the BDP, *Florence;*
— To the Moderators who directed the various sessions with competence and authority;
— To Prof. Fiora Imberciadori Polito, BDP, *Florence;*
— To Prof. Mauro Laeng, University of Rome;
— To Prof. Raffaele La Porta, University of Rome;
— To Prof. Lucio Lombardo Radice, University of Rome, recently deceased, to whom goes our remembrance and grateful memory;
— To Prof. Orio Onori, University of Florence;
— To Prof. Candido Sitia, « U. Morin » Center of Didactic Research of Bassano del Grappa.

And finally heartfelt thanks to the many and various collaborators at BDP, *whose efforts and personal sacrifices have enabled this encounter to proceed efficiently and serenely.*

I am sure that this initiative of the BDP *has been very appropriate and timely, particularly for the opportunity it has provided for gathering suggestions from the experience of other countries in our field, as well as for offering concrete suggestions for realizing rational and programmed projects in the field of pedagogic documentation.*

This present pubblication will serve as a useful tool for all those who are involved in these activities. The use of public funding in these fields which are constantly evolving, demands the urgent recognition, even in part, of those factors that help determine directions and tendencies. The purpose, in all this is, of course, to promote the correct and best use of the available resources in a functional relationship with the established objectives based on precise programmes.

RENATO BORTOLI
President of the Educational Documentation Library

Paolo Bisogno

Documentation: a Science among Sciences

CONSIGLIO NAZIONALE DELLE RICERCHE
Istituto di Studi sulla Ricerca e Documentazione Scientifica

Communication receives its motive force from the depths of the human spirit. It is both the first manifestation of man's social character and a factor in his development before the formation of the first society. On close examination there is no living being that does not communicate something to somebody. No element in nature ignores this basic need.

Social reality and process of socialization, but also interaction between man and the external world. Through this process man comes to understand that he is not aboslute reason, but a reason that terminates in the search for truth or whatever this expression can be thought to mean. Absolute truth, absolute « logos » has no need to search for truth because it would reach it immediately through simple intuition and it would be its own measure.

Research is an established element of human knowledge in general and of scientific knowledge in particular. Whatever the form it assumes, communication lives in and of the spirit of research. The advances of science do not pretend to be definite but merely the conquering of problems and doubts noted in previous reasoning processes. Communication does not impede or hinder research, but directs it by permitting a relationship between the singular and the plurality. Science problems, or problems in short, are expressions of the uncertainty of the situations which arise from the multiplicity of views of those who have interpreted and interpret the same experience.

Hence the need for critical confrontation arises. It springs from the presence of others; from the impossibility of man's living in isolation and, as a consequence, from man's social nature. It is this critical confrontation that tends to establish which hypotheses are better suited to verify reality.

This means denying the a-problematicalness of scientific knowledge and the problem solving ability of the single case. It also implies the accomplishment of that final and decisive step towards the integral problem-statement which determines the advance of knowledge. If the search for truth (or that which science temporarily considers as such), were entrusted to the singularity, while it is true that the obstacles would be manifest and the problem itself clearly stated, still the possibility of confrontation between truth and error would be lacking. As a result, the mind meeting truth because of its very unilateralness, would fail to recognize it, while every act of knowing must be conscious and demonstrate that it is critically established.

When the possession of truth is self-established, a-critical and therefore anti-scientific, avoiding every demand for proof, the act of communication is not only hampered but, in effect, becomes useless. Socrates once said that the essence of communication, which he called Dialogue, was the act of asking for and receiving explanations. In addition, every new acquisition of knowledge opens the way to new research and the wider and more fundamental the knowledge, the more it is rich in results.

Knowledge, science, is an inheritance destined to grow by everyone's contribution. Precisely because of its self-forming and self-developing character, it cannot ignore any contribution whatsoever. Knowledge of experiences, knowledge of the various developments of thought and research, critical comparison, the stimulus to advance, to know what has been done in order to do more, all these are the goals of documentation. Documentation, both a science and an art, is alive to the plurality of sources and content and allows the singularity to gather in a unified vision both the particular moments and the temporal processes of the development of knowledge. To communicate is to express one's own or another's thought to other and thus to inform others about something that has been thought.

The elements that documentation elaborates in order to communicate form the content of the informational act which is essentially the diffusion of known facts.

The connections between communication/documentation/information are so interwoven that it is difficult to separate one from the other. They should be considered as moments of the same process. They are, in fact, only divisible as an analytical study or as a practical procedure. In other words, at the conceptual level they form an organic whole while at the practical level they rely on distinct instruments.

Language represents an additional connection between these three elements and is the essential means for every form of communication and, in this context, every form of documentation and information.

Documentation is often thought to be a simple activity of collecting and cataloging various types of material — almost a modern development or enlargement of library science. Though such a description is not without an element of truth, it does not provide a clear view of the matter. Mathematics looked at under this way of thinking would be reduced to a more or less complicated series of calculations. It is true that a mathematician does in fact perform calculations even as a documentalist also collects and catalogues. But there is a lot more to it than this. It will often happen that a mathematician's calculations can help support and control other scientific activities which may have non-mathematics or even non-scientific purposes. This in no way prevents mathematics from being an autonomus discipline and still permits it to take its place in the field of sciences with its own rules and structures within an interdisciplinary context and function.

The situation of documentation offers many analogies to Mathematics (used here purely as an example), which can then be extended to other sciences not only on the level of evalutation but especially on the level of comprehension. It is not a matter of claiming positions of prestige or of ennobling an activity (which has no need for this), but rather it is a matter of clarifying the profound nature, the external manifestations, the general theory, the specific methodology, the motivations and the general and particular purpose that make it a complex discipline that demands preparation that is rarely found today. The documentalist will never be a specialist in a limited field of science even when his daily activity might give that impression to an outsider. If it were so limited, documentation would not be able to perform its own task nor could it achieve its wider purpose of expanding to embrace all the sciences.

There are many different ways of being, due, among other factors, to different ways and levels of experience, memory, cognitive capacity etc. It follows from this that if the subject/object relationship is considered in all its uniqueness, the relationship between man and reality is conditioned by the changing and changeable factors that direct how we understand the object. In everyday life this becomes point of view, angle of interest, perspective etc.

Positions are rarely interchangeable and so reality must be constructed by placing the *tesserae* of the great mosaic of knowledge according to criteria of relationships which are as various as they are perceivable. Today humanity has at its disposal a patrimony of knowledge accumulated over centuries of study and experiment. The universality of mankind, known and unknown, has contributed to the formation of this body of knowledge and the results of this effort, collected in an objective unity, form time after time the statement of civilization. This same statement reproduces the lineaments of the human spirit. It does not limit itself to the intelligence of the single but is a multiform, unified context in which every part is related to the others so that any change in the part affects the whole.

From a historical point of view, this condition must not be seen as something permanent and unmoving. Rather it is a path for the advancement of humanity.

From a scientific point of view, one must recognize that a science is conditioned not only by other sciences, but also, as part of a process, by all the other previous acquisitions of knowledge as well as by the level of its certitude and the depth of this experience.

From the point of view of the individual capacity to know, it must be accepted as a fact that it is impossible to repeat the experiences of many generations and to acquire *ex novo* the entire body of knowledge. This is particularly true today.

The patrimony of humanity is thus always present and unique. It is constantly growing, constantly maintaining its uptodateness and its uniqueness. The fact that it can be divided into periods represents mere convenient devices and instruments of diachronical analysis.

The division of knowledge and its applications into sectors must be brought back to unity by connecting the various sciences laterally and creating relationships between the various levels.

The individual need to draw from the common patrimony according to the individual interests. It is the proper task of documentation to examine, analyse, and make accessible the totality of knowledge in all its many forms. Documentation thus becomes a science in order to know and a technique in order to make known.

From what has been said so far, it is possible to trace the first outlines of a general theory of documentation. Given the double nature of documentation, this general theory will not be complete without a definition which is an essential part of the defining process and necessary for any deeper study.

The generally accepted definition of documentation (with adaptations and variants which are more formal than substantial), describes it as an activity that records, elaborates, communicates, researches and disseminates documents. Obviously here we are dealing more with a description of the phases of the documentary process or rather, an operational definition — which though valid in itself is insufficient and too limiting since it excludes other aspects which form part of its subject-matter.

It seems that going into the matter more deeply and without expanding our area arbitrarily, we can define documentation as that mental action which analyses and interprets the conceptual content of a document in order to specify its informational units and disseminates these through suitable procedures. In this definition both aspects of the discipline — the practical and the theoretical — are brought to light. It is possible to include in it the diverse though similar procedures used the field. It keeps separate the informational principles and the external manifestation. It correlates the specific activity of documentation with the other sectors (information and communication) whose complement it is and with which it is often confused.

The above definition is not a nominalistic nicety based on a *fallacia in dictionem* to be refused as a paralogism. Rather, it is the immediate consequence of the acceptance of analysis as a means of research. In other words, documentation is above all analysis and categorization which only in a second moment becomes an activity expressed in procedures and suitable languages. These may change in time and space or because of particular needs but the underlying concept is constant though, obviously, it can be enriched or purged. For some time now, documentation has not been looked upon merely as a simple technical support for other disciplines. Many consider it a science in its own right. Others refuse this notion and base their rejection mainly on its lack of a general theory.

There is no need to enter into the much debated question of the classification of the sciences. It is enough just to point out that from an epistemological point of view, documentation possesses all the elements that go to form the basis of any science — a general theory, terminology, distinct methodology.

Modern science is distinguished from medieval arts by the fact that there is agreement about the body of knowledge that forms the various sciences: « in order to be accepted, scientific knowledge must be available, published and documented in order to be subject to critical evaluation ».

If we accept this definition of science proposed above by Ziman, research and documentation are clearly seen as two images of the same problem reflected in a single mirror. Galileo wrote, « I sought the light of science and gaines from it » — documentation has always been the catalyst of scientific progress. Our society, conditioned by « aggressive » dissemination of new information, has greatly reduced the interval between research and the practical application of its results. So much so that in some areas of research, the interval is just a few years.

There is no science without communication. Bibliographic references are used to support many of the statements made when it communicates its results and the relative documents become part of the bibliographic sources. The methodology of this process, the intellectual structure implicit in the library, the catalogue, the encylopaedia, the treatise, all give meaning to research in the past and direct the research of the future. Mere accumulation of scattered details is not sufficient to furnish this order and meaning.

« The fruits of human activity cannot be valued solely on the basis of a complete chain of events that passes from scientific knowledge, (with all the elements needed to achieve this), through the various stages of research, to the production of goods or services integrated in the political and economic system. Exchange of information or knowledge is indispensable between those involved at every stage of the chain. It will be necessary to translate this information into language in order to transmit it to the other social groups involved in other areas and functions... Information is the support which permits this transmission of knowledge... It must not form a lifeless structure. The body of knowledge is in constant evolution. If information is to see and influence the future, it too must possess at least the seeds of progress, the discovery of tomorrow. It is precisely this heuristic element that distinguishes modern information science from traditional documentation ».

From what has been outlined above and in order to achieve our immediate purpose, we must limit our discussion to documentation as an art in which intuition, readiness of intelligence, ability to perceive relationships, the possibility of analysis and synthesis proper to the human mind, all come together, each according to its own nature within the cultural framework, to achieve the same result.

It must, however, be pointed out that the subjectivity proper to every art which is both thought and action or rather the relationship between the act of thinking and the act of producing, would, if allowed freedom, lead to highly personal realizations. These would not only lead to heterogeneous, disorganized results, but would also make these scarsely communicable since they the means of expression and a language universally accepted.

Indispensable objectivity is assured to transmission, dissemination, and communication by the technical procedures which arrange and regulate the material and thus allow uniform and organic treatment.

The convergence of personal qualities, mental activity, logical processes and procedures, i.e., the elements of art and technique — allow us to establish concepts, theories, terminologies, and special methods, all lead to the conclusion that documentation is an autonomous discipline. However, it still remains at the service of knowledge in general.

The method of documentation deserves special attention. It has the following characteristics — individual, objective, rigorous. It is individual because though it takes into account and uses the developments and results of other branches of science (logic, linguistics, mathematical logic etc.), they can only be applied to documentation. It is objective because it is detached from subjective interpretations and thus stable in time, is universally acceptable. It is rigorous because it conciliates logic with that of the human mind and so establishes norms and procedures for thought and activity.

Man and society are complex bodies in which impulsiveness and calculation, sentiment and reason operate. Together with these, there are many other elements both isolated and at odds with each other and which directly influence activity in the various areas in which it is possible to circumscribe (purely at an analytical level) individual and collective life. Thus, from time to time attitudes emerge in which motives, processes, and purposes can with difficulty be distinguished. Much the same situation can be seen in the various faces of civilization which result from concomitant personal and social action. There are moments in individual and social life that escape all mathematical or logical calculus. To attempt to reduce or restrain the processes of human activity to schematical boundaries *more geometrico*, is to forget an important area of research which deals with this and justifies such action. We know that science itself has much of the irrational and that the original and fundamental thrust towards knowlege — wich is the basis for all rational research — rises from the unplumbed depths of the mind.

Doubtlessly, it is possible to research the process of thought and the manner of action separately using different instruments and diverse methodologies. But still at the end of every such study it will be necessary to gather together the various agreements and disagreements into a single body of facts as science always does when it has researched the various sectors.

Developments in logic, especially formal logic, have proved it as an established way of studying the ways of proof used in the mathematical sciences or science in general as instruments of control. At the same time however (to avoid the road of reductionism), these developments have shown up the limited nature of the field since it must exclude everything that is not mathematical or which cannot be reduced to mathematics — e.g. — human sciences, law, philosophy, or from another aspect, innovation and intuition which are behind all research activity.

Two other reflexions on different but related levels must be made: internally, philosophical and epistemological reflexion is acquiring a growing importance in science. Externally, the scientist must account for his actions (his hypotheses or theories) not only to the scientific community via demonstrative discourse, but also to society at large via persuasive discourse. We must consider as outside the realm of proof and reason, those acts and realizations which are part of culture and civilization. Esthetic manifestations, too, in all their forms, escape the rules of calculus and appeal to the senses or the sentiments and are not subject to mathematical reduction.

While logic can appeal exclusively to the techniques of proof and uses frameworks and systems that of their nature can be formalized, rethoric, which intends to induce adherence to a determined thesis, cannot ignore conditions, aspects, motives, and reactions both psychical and social.

If science is to be accepted by society, society must adhere to the scientific discourse unless one intends to establish the predominance of dogmatic scientism which is most certainly not scientific.

When speaking of the dichotomy between convention and persuasion, it is useful remember what Kant says. He maintains that there are two types of belief. Where something is accepted or acceptable by everyone, objectively since based on reason, you have conviction. When its foundation is in the particular subjectivity, it is persuasion.

Persuasion is thus only in appearance because though it begins within the subject, as soon as it is externalized, i.e., becomes an object, it cannot remain subjective since that which is certain only for the individual as private and personal validity, cannot be externalized. When the validity is purely individual and limited to the individual who can only be certain within the framework of his own mind, externalization is only possible by proving the truth of the assertion. Truth must be based on reason because only if it is so based can it be accepted universally as the conviction granted to reason by the intellect. Reason is thus placed above intellect and mind and is the foundation of convinction.

In the Kantian argument there is a parallelism between subject/persuasion and object/convinction. At the same time these paired elements are in opposition. These opposition and parallelisms can only be accepted if we ignore the dependent relationship between persuasion and action and between convinction and intelligence.

In addition, even if analytically valid, the separation between reason and sentiment and between the act of reasoning and that of feeling, deprives man of something which stems precisely from the relationship between reason and sentiment — between the two spirits « *de finesse et de geometrie* ».

Add to this the fact that society does not require science only to provide certainties to satisfy its need for knowledge but also demands that it supplies modes and motives of action. This appeal to science comes from the whole man and not just from his intellect. Thus any presentation of knowledge to society must take account of man in his total environment and not merely as pure reason.

There are many disciplines that prove that the scientific act and with it the information it is based on and which thus permit it to exist, is accepted not as a pure act of knowledge but as a reply to the unsatisfied expectation of the irrational, the emotive etc.

Thus there is something more, or at least something different in the relationship between science, society and conviction. The very concept of truth is bound to the multiple ways of understanding and feeling and thus there are truths which need to be qualified or at least clarified, e.g. moral, religious, logical, provable, unprovable, accepted, social etc. Science would find it hard to furnish these clarifications because science does not possess truth, is only progressing towards truth and thus its results are always provisional. If it is accepted that only logically proven truths are valid, all progress in science is excluded since it would have to ignore what is not already known. Science's presentation, since every discipline must defend its own hypoteses and theories, is a work of persuasion that requires argumentation whose degree and level, rigour and severity all depend on the nature of the audience and not the material dealt with.

This is the view of the neo-rhetorical school which intends not merely to re-evaluate rhetoric itself but rather to insert the study of the reasoning process and its techniques into the field of scientific studies. Much use is made of the various linguistic disciplines among which the most interesting is semantics, a derivation of rhetoric.

The validity of this assumption remains unchanged whether we accept or refuse the dicotomy of the two cultures. Man is one and the division of this complex nature, a convenient expedient.

In the formal sciences — symbolic logical or mathematics, taken as instruments for formulizing scientific theories — true or probable facts are isolated to the benefit of all phases of the scientific process. However it does not seem either useful or legitimate to extend this objectivization to all fields. This is even truer when we recall that science offers different theories to explain the same phenomenon thus demonstrating the absence of a general agreement.

Doubtlessly this abuse has led to a general disdain for rhetoric. And yet science often has recourse to rethoric not only in strictly scientific matters but especially when it seeks correlationships and analogies in the phenomena, hypotheses and theories of other disciplines. In addition, rhetoric taken as a science or as a discipline reached through linguistics or logic, is part of the overall scientific framework in virtue of the theorical aspect of scientific culture which cannot be considered apart from the life of man and civilization in general.

It is not a matter of expressing value judgements about rhetoric or on the methods used by science and technology in their discussions. Rather we must be aware of presence of rhetoric so as not to be misled in our evalutation of the informational elements conveyed by the message. In order to do this and to avoid being deceived, we must distinguish between persuasive speech and facile rhetoric — between the technique of reasoning and empty words; between true and false knowledge.

Without reflexion on the science of meaning which rhetoric precedes and constitutes, something essential would be missing from knowledge and the application of language. It is rhetoric that makes knowledge possible and by integrating exposition (explanation, proof, persuasion), is essential to the completion of the scientific act.

From the point of view of documentation, rhetoric and logic appears as forms of thought or rather as forms assumed by thought, which have to be interpreted and brought back to the proper language of the discipline.

AIDA M. FURTADO

The present and the future of the International Network for Educational Information

(INED)

UNITED NATIONS EDUCATIONAL, SCIENTIFIC
AND CULTURAL ORGANIZATION
International Bureau of Education

21

Introduction

The utilization of participative and co-operative principles for the improvement of educational information services started to take shape at the IBE in 1971 when the Bureau organized a first consultative meeting which gathered ' a small group of specialists for the purpose of advising the Bureau on the Development of the Co-operative Educational Abstracting Service and related activities' (1). In the document presented to this meeting the development of a worldwide network for the dissemination of educational information based on national institutions is already mentioned as one of the IBE long-term objectives. The group, composed of specialists from different regions of the world, from the Unesco Regional Offices for Education and Unesco Headquarters, got together again in 1972, 1973, 1974, 1975 and had an outstanding role in setting up guidelines for the IBE's work in educational information.

As a follow-up to the suggestions and recommendations made by this group, several initiatives were taken by the IBE in the period between 1971 and 1975, such as the publication of an acquisition list, a newsletter and directories of educational institutions, the development of a thesaurus, the introduction of computer techniques in the Documentation Centre, and the creation of a computerized data base. During the same period efforts were made to encourage Member States to participate in the activities developed by the Bureau and many new contacts were established. However, by 1975 this participation was far from being widespread due to a general lack of national infrastructures to undertake educational documentation activities within countries.

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(1) IBE Working Paper for the Meeting of the Steering Committee on Educational Documentation and Abstracting Services, Geneva, 14-18 June 1971.

This point was raised during one of the meetings of the IBE Council, which considered that it deserved more profound discussion. Thus, the Council proposed that the improvement of educational documentation and information should be debated as the special theme at the following session of the International Conference on Education. The theme was formulated as follows:

« The problem of information at the national and international level which is posed by the improvement of educational systems ».

The discussion at the 36th session of the International Conference on Education, held in Geneva, 30 August - 8 September 1977, resulted in the adoption of Recommendation 71.

Based on this Recommendation, the IBE work in the field of educational documentation and information has been given the following purposes:

1-a: To establish the basis of an international network for educational information;

2-b: To encourage and assist Member States in establishing and developing their own national systems and their participation in the international network;

3-c: To provide information and documentation services to Member States at international and regional levels, in support of national educational development.

The international network for educational information (INED)

Paragraf 24 (A) of Recommendation 71 states that:

« Unesco, particularly through the IBE and in close collaboration with other international agencies and organizations, should undertake: the systematic planning, costing and development of a world-wide information network in education based on the active participation of regional and national institutions and programmes and including an assessment of the resources available and a time scale showing intermediate objectives ».

The first phase of this operation was the identification of national institutions which, with the support of their governments, were willing to co-operate in the network activities. Following a request addressed to all Unesco Member States by the Director of the IBE, eighty-three positive replies have already been received which may be considered a very encouraging result.

Network Participants

Region	*Number of participants*
Africa	16
Arab States	12
Asia and Pacific	13
Eastern Europe	7
Latin America and Caribbean	17
North America	1
Western Europe	17
Total	83

The positive attitude of Member States corresponds to paragraph 5 (c) of Recommendation 71, which says: « In drawing up a plan and programme of action leading gradually to the development of an educational information system, education authorities should... where national conditions favour this, identify a single national centre to serve as the focal point both for the national educational information network and for international contacts and exchanges in this area ».

The general objective of the network is to provide a better service to Member States, using for this purpose the information obtained from each one of them, processing it in different ways and redistributing the products to all the contributors. The main product obtained, appeared in 1981, and it is a quarterly bibliography strongly biased towards educational policy, in the form of a computer print-out taken from IBEDOC, the IBE's data base. For the preparation of this information tool we expect to receive contributions from national institutions in INED, who have been invited to supply the IBE with current documents and information on educational policy in their countries.

Although this bibliography is intended to be the basic tool for INED, it forms only a small part of those services developed by the IBE during these last years, and which have been integrated into INED services available to participant institutions as well as to Unesco Member States in general, through thier official institutions.

To provide a better knowledge of these services we have classified them in three groups:

1. Internal services
2. External services
3. Pubblications

Internal services

In this category we include the technical and secretarial services executed inside the Unit which establish the basis for the provision of external services and the preparation of pubblications:

a) selection and acquisition of bibliographical and audio-visual materials for the Documentation Centre;

b) processing incoming bibliographical and audio-visual materials. Until 1975 the Documentation Centre utilized traditional techniques to process its bibliographical materials. At that time, computerized techniques were introduced and an audio-visual collection was started. However, the new acquisitions of the Centre continued to receive the old treatment until 1980; when the data base of IBELIB was created according to the new computer sofware CDS/ISIS, brought from Unesco to the IBE. The installation of CDS/ISIS started in 1978 and the conversion of the three other data bases into the new system has now been finalized. This change was needed to assure compatibility with Unesco and with Member States who were adopting the same system.

c) processing of periodicals and preparing for publication, the IBE list of periodicals.

d) processing of microfiches includes; 1) the maintenance of the ERIC collection which now amounts to 200,000 items; 2) the preparation of the IBE Series of International Reports on Education (SIRE);

e) the Documentation Centre has developed four data bases; IBEDOC, containing materials on educational innovation and documents of Unesco and IBE meetings and conferences pertaining to SIRE; IBELIB, started in 1980 for processing the Documentation Centre's new acquisitions; IBECENT, containing information on educational institutions; IBETERM, containing educational terminology, namely the Unesco IBE educational thesaurus, As soon as the installation of the new software CDS/ISIS is completed, the two data bases IBEDOC and IBELIB will be merged, as they both contain bibliographical data.

External services

These are the services given to users which include several types:

a) local consultation — persons using the Documentation Centre for reading, making bibliographical research, photocopying documents, etc;

b) answering telephone enquires — persons needing information which may be given by telephone;

c) answering information requests arriving by letter or telegramme. In general, these enquiries demand extensive bibliographical researches, the preparation of bibliographies and the provision of supporting documentation. The utilization of computer techniques has increased our capacity to respond more quickly to this type of request. The Documentation Centre reference collection which may be considered as extensive, is also very effective as a means of assisting both local and distance users;

d) distribution of relevant educational documents under request and through IBE initiative; supply of small equipment — Answers for information may be presented under different forms. When the user can benefit library services in his city, we may chose to provide him with a list of relevant documents. On the other hand, if he has no references sources nearby from which to find the original documents mentioned in bibliographies, it is fruitless to provide him with only a list of bibliographical items, relevant though they may be. In this case, we manage to provide either the documents or their photocopies when this is possible. Another action taken by the IBE is to predict needs in Member States and assist developing countries to cope with these needs. To this end, a regular distribution of relevant educational documents is made to documentation centres in developing countries, which then become available to educators in general. Some of these documentation centres have also requested and received small equipment needed to improve their services, such as library cards, microfiche readers, card multipliers, labels, etc.;

e) expert assistance by the IBE staff — IBE staff members may travel on missions under the request of Member States or Unesco Headquarters to give advice on matters related to the development of educational documentation and information service;

f) receiving trainees at the IBE Documentation Centre. The IBE during the last five years, has been accepting documentation and information personnel from Member States and Unesco Regional Offices for training and/or becoming acquainted with IBE activities. Since 1980 when the computer system CDS/ISIS was installed at the IBE, the Documentation and Information Unit has received, in order to give further assistance, staff members of other organizations in Geneva wishing to adopt the same system.

Publications

The IBE Documentation and Information Unit is responsible for the preparation of the following publications:

a) *Educational Documentation and Information: the* IBE *Bulletin.*

This is a quarterly bibliographical bulletin, each issue treating a chosen topic. Published now in three languages, it tries to keep Member States informed on developments in different educational fields. Every four or five years the bulletin updates subjects which have been used previously. The bulletin requests and receives contributions from Member States.

b) IBEDOC *information.*

A newletter created in connection with the development of INED. Its target group constitutes the institutions participating in the network, and also educational institutions engaged in documentation and information work. This newsletter appears in English and French A Spanish edition is issued in cooperation with the Regional Centre for Education in Latin America and Caribbean. Its distribution is limited to INED partecipants and to institutions engaged in full or part-time educational documentation and information activities.

c) *The Documentation Centre Acquisition List.*

A computerized alphabetical list with subject index, a product of the data base IBELIB. Participants of INED were requested to provide the IBE with current educational policy documents which will be announced in the List. This bulletin is expected to become an effective information tool for educational policy and planning. It is distributed free to institutions in the « IBEDOC information » mailing list.

d) *Cooperative Educational Abstracting Services (*CEAS*).*

This is a project whose main purpose is to supply information to educational policy-makers and the educational documentation and research centres which serve them — with detailed analysis of documents carefully selected for their relevance to the field of educational policy. The other purpose of this project is to help the user to overcome language barries, that is, the length of the abstracts prepared for the project has been calculated so that the user, in most cases, will not need refer to the original document which, even if written in a language accessible to the user, may not be available for acquisition. The CEAS abstracts are published in two languages: English and French.

The IBE *directories:*

Information on educational institutions is stored by the IBE in its data base IBECENT, with the purpose of issuing directories to facilitate communication among institutions and specialists. These directories are updated periodically and so far, three of them have been published.

e) *Directory of educational documentation and information services.*

Lists about 110 institutions engaged in documentation and information work covering the whole educational field at national, regional and international levels. Most of the institutions listed so far are now participating in the network activities. The next issue to appear in 1982 (4th edition) will include all the INED national focal points.

f) *Directory of adult education documentation and information services.*

Registering about 180 institutions, it is now in its second edition. It has a supplement listing abstracting service in the field of adult education. Prepared in co-operation with the Division of Literacy, Adult Education and Rural Development in Unesco Headquarters.

g) *Directory of educational research institution.*

A survey of more than five hundred institutions all over the world. The first edition appeared in 1981. Prepared in co-operation with the Division of Structures, Contents, Methods and Techniques of Education in Unesco Headquarters.

h) *Unesco:* IBE *Education Thesaurus.*

Since the IBE took decision to introduce computerized techniques into information processing, a parallel operation was begun; the construction of an educational thesaurus to be used as a tool for improving efficiency in the process of computerized information retrieval. The first edition of this work appeared in 1973; an English-French list of descriptors and identifiers in alphabetical order completed by a faceted display of these terms and a rotated index. However, it became clear to the IBE staff that the publication of the *Thesaurus* was not the end of the operation but only the first step in a developing process which would be provoked by using the terminology in practice. In the plan established for the revision and updating of the *Thesaurus*, it was foreseen that there would be alternate editions in English and French. Accordingly, the first French edition appeared in 1974 and the second in 1976; the second English edition was issued in 1975 and the third in 1977.

Meanwhile, between 1973 and 1977, a Spanish version of the

Thesaurus was prepared and published with the collaboration of the Unesco Regional Office for Education in Latin and Caribbean (Santiago) and with the co-operation of national documentation centres in the region, particularly the Documentation Centre of the Ministry of Education in Cuba. A fourth edition of the English, French and Spanish versions are expected to appear simultaneously in 1982.

In 1977, the IBE negotiated with the Documentation Centre for Education of the Jordanian Ministry of Education to translate the *Thesaurus* into Arabic. A preliminary edition appeared in 1979 and was distributed to educational institutions in the Arab countries for suggestions. The Unesco Regional Office for Education in the Arab countries is co-ordinating the revision of this work. A Russian translation of the *Thesaurus* is also in preparation following an agreement between the USSR National Commission for Unesco and the IBE.

Another development concerning the *Unesco-*IBE *education thesaurus* is the preparation of compatible specialized thesauri. An experiment was began with the French edition in 1979 which included a separate list of descriptors of relevance to adult education. If the experiment is shown to be useful, it may be extended to other special fields in education.

INED *Future development*

We have so far described how the IBE has included in its activities the development of a network to facilitate the exchange of educational information amongst Member States and the integration of its information services into the network. What can be expected for the future from this network?

Our first preoccupation is to assure the maximum participation of Member States, and to this end, giving as much attention as possible to the creation or improvement of documentation and information activities in Member States, to the training of their personnel and to development of standardization. To pursue this objective the IBE has the co-operation of Unesco's Education Sector and the General Information Programme which may intervene, in the operational field to provide fellowship, consultants, etc.

In relation to co-operation in this same field we also consider of great importance, the requirement for normalization of techniques and procedures. The development of an education thesaurus by the IBE (see p. 32) has had as its motive not only our own work but its use as an instrument to facilitate co-operative computerized programmes such as INED.

Another useful step towards standardization has been the adoption by the IBE of the computer programme CDS/ISIS developed by the Unesco Division of Library, Archives and Documentation Services (LAD). Since we consider this point of special significance to Member States wishing to establish their own computerized projects, further information on CDS/ISIS is found in the Annex.

In this first phase of INED we have requested that participant institutions provide us with literature concerning educational policy in their countries. This material has so far been processed by the IBE for utilization by Member States. (See Acquisition List p. 31). However, with the increase in the number of participants as well as in the volume of materials provided by them, a more active participation will be required from INED members, involving for example, processing materials before sending them for input into the IBE data base.

Another development programmed for the second or a third phase of INED activities is the preparation of abstracts to accompany each bibliographical reference. So far we have limited the presentation of our List to the complete reference followed by descriptors. However, it is undoubtedly the case that the utility of this bibliography would be greater if the bibliographical references were accompanied by abstracts. This task will be impossible to undertake without the co-operation of INED participants; such-co-operation is in accordance with the spirit of Recommendation 71 and the will of Member States in the sense of increasing national capacity of participation in regional and international projects, for the benefit of all the participants.

In a later phase foreseen for this main INED activity (the building up of a data base on educational policy), INED participants will be invited to send their contributions, whenever possible, under the form of magnetic tapes. From nesct year the IBE will be ready to make available to educational institutions in Member States, tapes of its own data base.

To finalize this overview on the future of INED, we should like to mention again that since 1977, the IBE Secretariat has been guided by Recommendation 71 in planning its activities in the field of educational documentation and information. Nevertheless, we consider that meetings such as this, which have provided the opportunity of presenting our programme of work, give us the possibility of receiving criticisms or suggestions from Unesco Member States represented therein, and which may consequently contribute to the improvement of our activities.

Annex

The International Network for Educational Information (INED) and its new computer programme

With the objective of improving the efficiency of INED services, the International Bureau of Education has taken the decision to adopt the computer programme CDS/ISIS for its information activities. This acronym stands for Computerized Documentation System-/Integrated Scientific Information System and is a computer programme (software) developed by Unesco.

The main advantage of this decision is, in the first place, the establishment of links between the IBE computer in Geneva and the Unesco computer in Paris, making it possible for the IBE to have direct access to the information stored in the Unesco data base. The system is expected to be operational in 1981.

Another major interest of CDS/ISIS is that it is available to national institutions in the Member States of Unesco. It would also provide the possibility of compatible procedures among the national agencies participating in the INED network.

The CDS/ISIS *programme package*

The CDS software is a highly developed and enhanced version of the original ISIS programme package; it is compatible with software used at the International Labour Organization in Geneva, the Food and Agricolture Organization in Rome, and a growing number of organizations and institutions in the Member States of Unesco.

In response to interest shown in CDS/ISIS by institutions in Member States, Unesco has made the programme package generally available. Following the signature of a transfer agreement and prior to the actual installation, a training course is held. Staff from the receiving institutions follow a three-week training course, normally held at Unesco Headquarters in Paris. When the system has been installed some preliminary operations are undertaken, usually by the institute's own technicians but with short-term assistance from a Unesco expert. After that, the new installation should be autonomous and requires no more direct assistance.

However, Unesco does keep close contact with CDS/ISIS user in order to ensure maintenance and updating of the system. All users are kept informed of developments by newletters, and Unesco has a special CDS/ISIS system are recorded. These changes are communicated regularly to all users.

Follow-up is provided to every installation in the following ways: *a*) visits by Unesco experts; *b*) technical advice by mail, telex or telephone; *c*) regular shipment of new techniques and relates up-to-date documentation.

CDS/ISIS has already been installed in the following countries: Brazil, Bulgaria, Canada, Hong Kong, India, Italy, Malaysia, Peru, the Philippines, Poland, Senegal, Singapore, Sweden, Thailand, the USSR, the United States and Yugoslavia.

Besides the IBE, the following United Nations agencies and international organizations are also using CDS/ISIS: the Food and Agriculture Organization (FAO); Unesco; the United Nations Industrial Development Organization; General Agreement on Tariffs and Trade (GATT); Centre Européen pour la Recherche Nucléaire (CERN); World Health Organization (WHO); International Refugee Integration Resource Centre.

Other organizations using CDS/ISIS are the International Centre for Scientific and Technical Information (Moscow) and the Organization pour la mise en valeur du fleuve Sénégal (Saint Louis).

For further information on CDS/ISIS please write to:

Chief of Division
Library, Archives and Documentation Services
Unesco

7 Place de Fontenoy
75700 PARIS
France

WILLEM F. DE REGT

Eudised, a decentralised system with a common Thesaurus

CONSEIL DE L'EUROPE

34

The International Federation for Documentation, normally abbreviated to « FID » organizes biennal congresses on current documentation problems. The main theme of its 1978 congress was « New trends in Documentation and Information ». One of the contribution in the session on new developments in classification was the one of Prof. Lancaster of the University of Illinois on trends in indexing.

Prof. Lancaster, considering the future trends in information processing, suggests that we are moving rapidly and inevitably to an electronic society, one in which print on paper will largely disappear. (The paperless information society). He also is of the opinion that in this society the information will be indexed and retrieved by use natural language indexing techniques.

It was at the same congress that Prof. Neelameghan of the Documentation Research and Training Centre in Bangalore (India) sent a word of warning. He underlines the importance of mission-oriented systems, which — in the coming decades — will be serious concern of information specialists.

In mission-oriented tasks, usually several persons work in task forces on various subtasks. The respective areas of concern may, however, not neatly fit into any subject field or discipline. Before we safely can enter the area of natural language indexing, it seems that we should give ample attention to the following problems:

— intercultural problems
— interdisciplinary problems and
— interlingual problems

Culture has been described as the ability of a group to recognize, to interpret and to produce signs in idential ways. In a world where everything can be a sign, culture is a coherent whole of semiotic customs. Differences in semiotic customs determine the demarcation between cultures. It is difficult to cross demarcation lines. It is also difficult to cross disciplinary boundaries of jargon. Vocabularies and terminologies of the various disciplines differ considerably. As to the difficulties between various languages, one question to mr. Lancaster seems very relevant: which natural language?

It does not seem too audacious to foresee that in the near future we do not need to bother too much about natural languages in indexing. On the contrary, controlled information languages will be used in documentary information systems for the time being.

It is for that reason that I like to explain to you some of the characteristics of Eudised.

Eudised; the system

EUDISED is the acronym for « European Documentation and Information System for Education ». This system must be understood as a network of educational information centres of a number of member-states of the Council of Europe.

To get a clear picture of this system, it seems necessary to distinguish between: the system as such, the main instrument to the system and the various subject-contents of the system.

EUDISED was as a project launched in 1968 as part of the Council of Europe's continuing effort to implement Resolution 5, adopted by the Conference of European Ministers of Education in 1962. This Resolution stressed that intergovernmental co-operation in the fields of education and research was only possible on the basis of an organized exchange of information.

In 1968 a group of experts was invited to report on the possible co-ordination of the free flow of information on educational matters between the member-states of the Council of Europe. The experts were of the opinion that a unique oppotunity presented itself to frame and implement a long-term plan for European co-operation in this field. They therefore urgently recommended that ways of promoting the co-ordinated application of new techniques to educational documentation and information at the national and international levels be considered in order to prevent incompatible and irrevocable development in the various member-states.

With this in mind the experts proposed that a working party be established of representatives of member governments, carrying out or considering projects for the application of computer assisted and other new techniques in educational documentation and information.

The Council of Europe accepted the proposal in principle, but was of the opinion that before realizing such a system it was necessary to develop an essential instrument: the *thesaurus*.

The EUDISED *thesaurus*

In 1971 in a report of mr. J. Viet, director of the « Maison des Science de l'Homme » it was recommended to prepare an authorized, multilingual list of descriptors, to be used as a common indexing and retrieval language in EUDISED.

In 1972 a working party « Multilingual EUDISED Thesaurus » was established, composed of representatives of eight member-states. (France, Federal Republic of Germany, the Holy See, Italy, The Netherlands, Norway, Spain and the United Kingdom).

During the preparation of the thesaurus constant reference was made to the cultural background against which the educational sciences have developed in Europe and, so as to root the information language firmly in the practice of its future users, it was situated as far as possible in the vocabulary proper to those sciences.

Multilingualism was recognized from the outset. The more usual procedure of starting with a basic vocabulary in one language and then trying to find corresponding terms in other languages was not adopted. Instead the field was approached simultaneously in three linguistic areas — the English, French and German.

Care was taken at all times to ensure that none of the three languages acquired a privileged status in relation to the other two, The endproduct is therefore a thesaurus in various versions, initially in three languages, later extended to five versions, i.e. English, French, German, Spanish and Dutch. Recently enriched with the versions in Danish, Italian, Portugese and Greek.

The EUDISED Multilingual Thesaurus, consisting of some 2500 descriptors, has been systematically presented in what are called 21 facets, based on a study by W. J. Foskett of the University of London.

EUDISED; *its applications*

The Committee for Educational Documentation and Information of the Council of Europe, which acted as the responsive body for the development of EUDISED, was in general agreement that EUDISED could only be implemented field by field and through a long-term operation.

Implementation should begin in that field to which a majority of member governments gave high priority, and which as a consequence was already well developed, with national centres or services operating and using or planning to use computer techniques for their documentation and information functions.

At its 1974 meeting the committee noted that alla member governments of the Council for Cultural Co-operation gave considerable support to educational research and development in their countries. As a consequence there was a growing interest in improving dissemination and change of information in this area, not only at the national but also at the international level.

The Committee decided therefore to initiate a project to demostrate the potentialities of EUDISED in the field of educational research and development. (EUDISED R and D).

The R. & D-project aims basicly at the formation of a computer-based data-collection of on-going and completed educational research. Besides the applications of the EUDISED in national and internal documentation systems, EUDISED R & D is an example of a joint effort of member-governments to set up a common database, resulting from a decentralised input of the data, which can be retrieved using all available versions of the thesaurus.

On-line acces of this database has not been realized. Negotiations are conducted at the moment. Instead of direct on-line access, EUDISED R & D offers and this was foreseen from the outset, a regularly publication of the research data in three working languages, with separate indexes in all five existing thesaurus language versions.

New developments

Besides the EUDISED R & D project the Committee for Educational Documentation and Information of the Council of Europe has also proven the potentialities of the system in the field of documentation of articles in educational periodicals and of non-book material, in particular of audiovisual media.

With the completion of these projects the basic preparatory work which has gone into the EUDISED-project was completed. A proven vehicle for the efficient processing of information storage and retrieval in educational fields was put at the disposal of interested governments. The EUDISED-project as such could be considered as completed.

Before dissolving itself, the Committee for Educational Documentation and Information in a meeting of formulated a recommendation to the Council for Cultural Co-operation, in which it brought to the attention of the Council the desiderability to set up a permanent body for the maintenance and promotion of the main instrument of EUDISED, the EUDISED Multilingual Thesaurus.

Important reasons for such a more permanent body were:

1 - the inevitable expansion of the thesaurus with new educational concepts;
2 - the necessity of maintenance and revision and
3 - the desiderability of introducing special subfields, such as language teaching, special education, sports, etc.

The first reason — the expansion of the thesaurus — got high priority, consequent on the wish of the Council of Cultural Co-operation to set up and maintan a close relationship with the Unesco/IBE thesaurus and the needs of the new Network EURYDICE of the European Community.

The decision of EURYDICE to accept the EUDISED Multilingual Thesaurus as common information language for its system, put pressure on the co-operation between Council of Europe and the European Communities. This was relevant in particular for the publication of an updated EUDISED Thesaurus. The up-date was prepared by a special working group. The Commission of the European Communities offered the use of their thesaurus generating programme « Astute » and with some supplementary programming integrated and up-dated versions in five languages were processed and published. As contrasted with the initial publications of the EUDISED Thesaurus the descriptors in the up-dated versions are presented in an alphabetical order. In agreement with the policy on international co-operation in thesaurus management a Joint Management Group was established, composed of a number of representatives of contributing countries and representatives of Unesco/IBE and the Commission of the European Communities.

It is in this way that a basic instrument and ways and means are available for the maintenance, revision and promotion of EUDISED, which should accordingly be considered as a regional system within the frame work of a more worldwide educational documentation and information system under the sponsorship of Unesco.

EUDISED is a decentralised system and developed as

1 - a network based on national documentation and information centres;
2 - based on language area co-ordination and
3 - based on co-operating chains of specialised centres in the field of education.

The Netherlands' application of the EUDISED *Thesaurus*

The active participation in the development of the EUDISED Multilingual Thesaurus led in the Netherlands to a considerable delay in the conversion of the traditional, manual documentation system to a computer-assisted one. In particular because a major decision had to be taken.

Should the Documentation Department of the Ministry of Education and Science continue to adopt its UDC-based code for interactive use in a computerised information system or had it to choose for the international common documentation language of the EUDISED Thesaurus.

This Thesaurus is characterized not only by its multilingual aspect. Inherent to the types of international thesauri is the lacking of typical national terms, such as the names of educational institutes and schools. For pure national use an extension of the EUDISED Thesaurus is needed. This extension takes the form of an enlargement, because the added national descriptors have to be integrated into the existing arrangement of the international accepted descriptors.

This introduction, however, results in a new and selfreliant national thesaurus, which in the Netherlands was given the name of ADION Thesaurus. ADION being the acronym for the Dutch computerised documentation and information system for education.

The ADION Thesaurus — scrupolously derived from the EUDISED Multilingual Thesaurus — is presented in a systematic and an alphabetical form, both having either an alphabetical index or a systematic display. For the processing, up-dating and generating of the ADION Thesaurus the Stairs-TLS programme is used.

During a rather long period of co-operation in international committees and working groups for the establishment of a multilingual thesaurus Dutch representatives gained the following experience. The notion of a multilingual thesaurus is seldom soundly understood by representatives of widely spoken languages in the world. The multilingual aspect then is usually considered merely to be a translation problem. This is a rather one-sided and limited point of view. Especially representatives of the smaller language areas are in a better position to recognise the true nature of a multilingual thesaurus.

Such thesauri exist in the minds of people and find concrete expression — using a natural language — in the form of a particular language version.

To conclude this introduction it seems concret to state that EUDISED as a system offers the needed potentialities for developing documentary information systems, which allow for a free flow of information, independent of the language in which the information is presented. Secondly that the EUDISED Multilingual Thesaurus is an indispensable instrument, which needs careful maintenance and properly processed in a natural language, offers a reliable auxiliary for the transfer of knowledge between men.

SIMONE PISSARRO

Information et Education: situation actuelle et perspectives. Le rôle du Centre National de Documentation Pédagogique (France)

CENTRE NATIONAL DE DOCUMENTATION PÉDAGOGIQUE

Limites

Nous limiterons notre exposé aux niveaux élémentaire et secondaire de l'enseignement, et n'aborderons donc pas le niveau de l'enseignement supérieur: universités et grandes écoles, qui, historiquement, disposent de moyens d'information spécifiques.

Nous ne développerons pas non plus le rôle des bibliothèques pubbliques dans l'accès aux documents, bien qu'une grande partie de leurs usagers soient des enfants et des jeunes.

Les objectifs que poursuivent les Bibliothèques publiques et les centres documentaires pédagogiques sont complémentaires et non concurrentiels. En France, ils relèvent actuellement de deux Ministères différents, mais cela n'a pas toujours été le cas.

1. *Bref historique*

La France a été, au siècle dernier, l'un des premiers pays à créer un « Musée pédagogique » destiné à témoigner de l'éducation et à favoriser la comparaison de l'éducation entre les pays.

Une bibliothèque a été fondée, qui rassemble aujourd'hui un fonds historique sur l'education (dont une importante collection de manuels scolaires). Des collections de matériels ont été constituées, qui sont aujourd'hui rassemblées et gérées par le Musée d'Histoire de l'éducation, implanté à Rouen. De cette maison-mère sont actuellement issus deux établissements publics: l'Institut National de Recherche Pédagogique et le Centre National de Documentation Pédagogique. Le premier oriente ses activités dans le domaine de la recherche fondamentale et appliquée et diffuse une information sur la recherche en éducation, destinée aux chercheurs et aux enseignants engagés dans des activités de recherche ou d'expérimentation; il travaille en coopération étroite avec le Centre de Documentation du C.N.R.S.

Il diffuse régulièrement un bulletin d'analyses de livres et de revues françaises et étrangères et anime une revue spécialisée « La Revue Française de Pédagogie ». Le Centre National de Documentation Pédagogique assure — outre une mission de production de documents pédagogiques — l'essentiel des actions de documentation et d'information pédagogique sur le fonctionnement du système scolaire, la règlementation, les ressources pour l'enseignement.

2. *Documentation Pédagogique: aspects institutionnels*

En matière de documentation pédagogique la situation de la France peut sembler satisfaisante, du moins sur le plan institutionnel; elle dispose en effet d'un établissement public autonome. Le Centre National de Documentation Pédagogique subventionné par le Ministère de l'Education Nationale, travaillant en coordination avec des Centres régionaux, départementaux, dont la mission est de collecter, gérer et communiquer les documents nécessaires aux personnels de l'Education, principalement en direction des écoles maternelles, des écoles élémentaire, des collèges et des lycées; dans les établissements d'enseignement eux-mêmes, des Centres de Documentation et d'Information sont implantés et dans les écoles élémentaires, des bibliothèques centres documentaires commencent à se développer. Avec ces centres, le C.N.D.P. entretient des relations privilégiées, tendant à constituer ainsi un réseau national de documentation pédagogique.

Dans un article récent de la revue « L'Education » (1), le C.N.D.P. est qualifié de « premier appareil d'Etat décentralisé », sa structure apparaissant en effet comme une « tentative de décentralisation avant la lettre ». En effet, les Centres régionaux et départementaux sont relativement autonomes et étroitement coordonnés avec les instances régionales qui d'ailleurs participent (jusqu'à 80% pour certains centres) à leur financement, et ont été souvent à l'origine de l'ouverture des centres départementaux. En ce sens et bien que l'on puisse à juste titre penser que ce financement a été un palliatif à un financement d'Etat insuffisant, il a favorisé l'ouverture régionale de ces centres, tandis que le statut d'établissement pubblic permettait de les fédérer, et favorisait une certaine cohérence au niveau des actions de documentation, d'animation pédagogique et de production. Malheureusement, la couverture nationale en centres départementaux n'est pas encora achevée (70 C.D.D.P. sur 95 départements).

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(1) *L'Education*, n. 472-473, p. 12.

Elle figure parmi les priorités des années à venir. De même, la couverture des établissements d'enseignement secondaire en C.D.I. est loin d'être achevée (4.500 C.D.I. pour 6.500 établissements), les lacunes se situent malheureusement au niveau des établissements les plus démunis culturellement (C.E.S implantés en zones rurales, L.E.P.).

3. *Missions du* C.N.D.P.

Le changement d'orientation politique intervenu en 1981 a amené l'établissement public à faire le bilan des années écoulées et à réfléchir aux orientation qui seront les siennes dans le cadre d'une politique éducative différente; une commission a été mise en place à cette fin; dans son bilan, elle a mis en lumière les stagnations, voire les régressions dans le développement de l'institution, les difficultés de financement ayant mené l'établissement à privilégier un certain nombre d'action « rentables » (notamment vente de documents) au détriment d'actions de service public, parmi lesquelles l'extension des services de diffusion, d'information et de prêt de documents aux établissements scolaires; la censure exercée par le Ministère de tutelle sur les productions a été également mise en avant comme un facteur de désaffection des usagers envers un établissement perçu comme ayant perdu son autonomie et son indépendance dans la conception et la réalisation de ses actions.

La commission a estimé que la configuration décentralisée de l'établissement représentait un atout majeur dans la mise en oeuvre d'une politique documentaire qui devrait découler précis en matière d'information. C'est ainsi qu'elle a proposé d'inscrire les missions de l'établissement dans le cadre général suivant:

Objectis au niveau gouvernemental:

Pour assurer l'égalité de tous les citoyens devant l'information, leur participation active au processus d'information, tant comme consommateurs que producteurs d'informations, une EDUCATION à l'INFORMATION devra être organisée dans le cadre des missions dévolues au Ministère de l'Education Nationale.

Objectifs au niveau ministériel:

Pour former des citoyens capables d'autonomie, de responsabilité et de partecipation active à la vie communautaire, le système éducatif doit constituer un moyen pour chaque individu d'acquérir les savoirs, les savoir-faire et les savoir-être qui lui sont nécessaires.
Cette formation implique que soit intégrée à tous les niveaux du processus éducatif, une éducation à l'information, de telle sorte que chacun soit capable de:

— accéder aux information disponibles, sélectionner celles qui sont pertinentes, en appréhender et en critiquer le contenu;
— participer au système d'information social, aussi bien en tant que consommateur que comme producteur d'information.

Cette éducation à l'information devra s'inscrire dans le cadre général des principes du service d'éducation: gratuité, ouverture, décentralisation, pluralisme de l'information.

La commission a d'autre part estimé qu'il convenait de mettre l'accent sur un aspect particulier, *l'information sur l'éducation*, dont l'importance lui paraissait devoir être affirmée, afin de clore une ère de sous-information entretenue ces dernières années par les précédents gouvernements. C'est pourquoi elle a estimé que: pour assurer l'amélioration des prises de décision en matière de politique éducative et l'evolution du système éducatif en relation avec l'évolution de la société, un système d'information devra être mis en place, chargé d'organiser l'élaboration, l'enregistrement et la communication de toute information ayant trait aux systèmes d'enseignement, aux processus éducatif et aux activités culturelles. Cette information devra être fondée sur un principe de circulation de l'information dans tous les sens possibles (allers-retours verticaux et horizontaux).

Elle devra répondre aux besoins de tous les partenaires participant à l'action éducative à quelque titre que ce soit: responsables de la politique gouvernementale et ministérielle, administrateurs, chercheurs, formateurs d'enseignants, enseignants et éducateurs, personnels non enseignants, élèves, étudiants, adultes en formation, les responsables des collectivités locales, des associations, des syndicats, en général tout membre de la collectivité concerné par l'éducation.

La commission a enfin défini les objectifs du réseau C.N.D.P. en matière d'information sur et pour l'éducation:

— assurer l'information sur l'éducation en France et à l'étranger et la documentation pour l'enseignement;
— parteciper à l'education à l'information des agents et des usagers du système éducatif.

Pour atteindre ces buts, il devra:

— constituer et gérer le système documentaire qui permettra l'accès à toutes les informations et à tous les documents nécessaires dans l'éducation, quels qu'en soient la source ou le support, en employant les moyens de traitement et de communication, et coordonner ce système avec les autres systèmes existants, tant en France qu'à l'étranger;
— définir et mettre en oeuvre les actions de formation à l'utilisation du système documentaire;
— produire tout document répondant aux besoins d'information, de formation et de recherche sur tous supports;
— parteciper à définition et à la mise en oeuvre d'action de formation à l'intégration du document dans la pratique pédagogique
— établir et développer les relations fonctionnelles avec les Centres de documentation et d'information des établissements d'enseignement primaire et secondaire et des services de l'Education Nationale, notamment par la production d'outils documentaires d'intérêt général et par la formation initiale et continue des personnels documentaires qui y sont affectés.

La commission a préconisé un changement d'attitude concernant les usagers de l'établissement, qui devront être constamment associés à la définition des actions.

Elle a estimé que l'identification des besoins restait à approfondir, et qu'il conviendrait de redéfinir les processus d'évaluation, non plus à partir de données quantitatives, ou seulement quantitatives, mais aussi et surtout à partir d'instruments permettant d'évaluer l'adéquation des services rendus aux besoins réels des usagers.

Le problème de l'évaluation des systèmes d'information reste d'ailleurs — et pas seulement au C.N.D.P. — un problème pour l'instant non résolu. On sait pertinemment que les usagers « non professionnels » ont tendance à réduire leurs besoins aux services que les « professionnels » leur apportent habituellement, et d'autre part que les professionnels ne proposent que les services qu'ils maîtrisent le mieux. Il paraît indispensable que des recherches soient menées dans le domaine particulier de l'enseignement aux niveaux primaire et secondaire, les explorations ayant davantage, jusqu'à présent, été menées en direction d'adultes engagés dans la vie professionnelle et potentiellement « consommateurs payants », ce qui incite à dégager de nouveaux produits rentables.

4. *Les publics vises*

Deux catégories de publics ont été dégagées:

- un groupe prioritaire, comprenant tous les personnels relevant de l'Education National, tous les éducateurs et formateurs des autres départements ministériels, les élèves et les étudiants, les parents;
- un groupe pour lequel le C.N.D.P. reconnaît sa compétence, mais envers lequel il ne peut dès maintenant entreprendre d'actions spécifiques: adultes en formation, responsable des collectivités régionales et locales, des associations et des syndicats (à l'exception du champ « information sur l'éducation » pour lequel cette restriction n'entre pas en ligne de compte).

La commission a stimé que les moyens actuels du C.N.D.P. ne lui permettent pas de répondre aux besoins d'un public qui serait considérablement élargi par rapport à son public traditionnel actuel. Elle estime que seule l'informatisation des actions documentaires permettra d'éliminer progressivement cette limitation de son public.

La « fonction médiathèque » du C.N.D.P.

Tous les centres régionaux et départementaux ont constitué des bibliothèques, devenues des médiathèques, pour répondre aux besoins specifiques des enseignants et des centre personnels de l'éducation. Ils assurent ainsi le prêt d'un nombre considérable de documents, sur place, par correspondance et aussi, dans certaines académies, par mini-cars itinérants. Il n'est pas possible, pour l'instant, d'évaluer quantitativement ces fonds. Les domaines couverts sont ceux qui intéressent l'enseignement (programmes); une partie des fonds recouvre les sciences de l'éducation et la règlementation scolaire. Tous les supports sont présents; les livrets de diapositives, les cassettes, sont les plus nombreux et les plus fréquemment empruntés. Les vidéo-cassettes commencent à s'implanter, au fur et à mesure que se développe l'équipement des établissements en magnétoscopes.

Tous les centres régionaux et départementaux diffusent des catalogues (thématiques et par supports) des collections disponibles. Ces catalogues sont encore élaborés traditionnellement, et diffusés sur support papier, à l'exception des académies de Toulouse, Reims, Caen et prochainement Poitiers, qui diffusent leurs catalogues sur microfiches, dans le cadre d'un catalogue automatisé partagé mis au point par le C.R.D.P. de Toulouse.

Catalogage automatisé

Ce catalogage automatisé, créé en 1971 et devenu opérationnel, n'a bénéficié ni a son démarrage, ni encore aujourd'hui, des aides financières lui permettant de couvrir progressivement l'ensemble du réseau C.N.D.P. On peut espérer qu'une décision interviendra prochainement dans ce sens.

Caractéristiques de la base de données catalographiques:

80.000 titres différents actuellement disponibles, avec plus de 170.000 localisations (C.R.D.P. ou C.D.D.P.).

Edition de catalogues par disciplines, le taux de recouvrement des fonds entre deux académies est approximativement de 80%. Tout nouveau centre entrant dans le système n'a donc qu'un travail de pointage, d'indication de localisation pour 8 sur 10 des documents et un travail d'entrée sur bordereau pour 2 documents sur 10.

Les catalogues offrent les indications classiques: auteur (s), titre, description. Chaque document est indexé à l'aide d'une liste de mots-clés élaborée progressivement par les documentalistes du centre.

Aujourd'hui cette liste de mots-clés est en cours de transformation en un langage d'accès hiérarchisé.

La base comprend:

— un fichier général chronologique déscrivant la base;
— un fichier général titre permettant une entrée peu ambiguë dans le fichier chronologique;
— un fichier régional titre, permettant de répondre régionalement à la question: Avez-vous tel document? Où est-il?;
— un fichier régional auteur permettant de répondre à la question: qu'avez-vous de tel auteur? Où est (sont) ce (ces) document (s)?;
— un catalogue régional systématique permettant de répondre régionalement à la question: qu'avez-vous sur tel sujet? Où puis-je le (s) trouver? incluant tous les types de documents.

Le produits sont:

— catalogues régionaux;
— catalogues par disciplines;

sur micro-fiche C.O.M. régulièrement actualisées.

Vers un accès télématique

Passer de la production de catalogues, à partir des fichiers de la base, à l'interrogation directe par l'utilisateur: tel est le projet du C.R.D.P. de Toulouse, qui a obtenu le feu vert du Ministère pour s'engager dans une expérience d'interrogation par voie télématique (système vidéotex) de la base catalographique, laquelle pourrait évoluer vers une base de données si l'on y incluait les didacticiels, les logiciels, des données factuelles d'intérêt pédagogique. Cette expérience est financée en partie par les Télé-communications.

Le projet a pour objectif:

— pour les élèves eux-mêmes: développer les pratiques autonomes de recherche d'information, leur permettre de se familiariser avec les langages documentaires et avec des outils destinés à entrer rapidement dans beaucoup de foyers; ils pourront également accéder à des logiciels répondant à leur activités informatiques (clubs-informatique des lycées et des collèges);

— pour les adultes en formation continue dans les établissements d'enseignement: améliorer l'accès aux documents qui leur sont nécessaires;

— pour les enseignants, les personnels d'éducation: accéder aux documents sur l'éducation, les mettre en mesure de vérifier la pertinence du fonds de l'établissement où ils exercent et de le faire évoluer, acquérir les didacticiels utiles pour un enseignement assisté par ordinateur, accéder aux documents utiles pour la mise à jour de leurs connaissances et pour l'exercice de leur profession (documents réglementaires notamment);

— pour le grand pubblic, en prenant pour hypothèse que les C.D.I., à terme, deviendront un lieu d'information pour les membres de la collectivité: améliorer leurs connaissances ou compléter leur information (en tout premier lieu les parents, les responsables des collectivités locales qui gèrent les constructions, les matériels, les équipements scolaires);

— pour les documentalistes enfin, à la fois utilisateurs de la base et fournisseur de données, médiateurs privilégiés entre les utilisateurs et le système, qui trouveront dans l'accès par voi télématique la solution à certains problèmes (gestion, emprunt de documents): améliorer l'accès aux documents et leur rotation, et mieux diversifier les supports.

Le projet prévoit que chaque C.D.I. pourra accéder à son propre fonds, et en cas de besoin, aux fonds départementaux et régionaux: lors de la consultation, les ressources affichées sont d'abord celles du consultant, puis des centres les plus proches jusqu'aux plus éloignés.

Les C.D.I. entrant dans l'expérience seront équipés de trois terminaux (dont 1 pour la gestion), les établissements dépourvus de C.D.I. recevront un terminal de consultation. Les centres de formation d'enseignants, d'adultes en formation continue, les C.R.D.P et C.D.D.P. seront équipés de 3 à 6 terminaux.

Le serveur implanté au C.R.D.P. de Toulouse, devra être fiable. Il sera divisé en deux sous-ensamble spécialisés permettant le basculement de l'un sur l'autre en cas de panne, la séparation entre l'accès pour la consultation et l'entrée des données; la protection des données en cours de gestion. Il devra permettre un accès rapide à un grand nombre d'utilisateurs.

Il est prévu de faire évoluer qualitativement la base de données catalographique (résumés constitués de mots-clés complétant l'indexation hiérarchique) ce qui améliorerait les procédures de recherche documentaire.

Pendant toute la durée de l'expérience, les équipements en matériels seront fournis gratuitement y compris la maintenance du matériel et les communications téléphoniques ne seront pas facturées par les télécommunications.

Un didacticiel d'apprentissage sera mis à la disposition des usagers.

A terme, et si l'on prend pour objectif l'extension du système catalographique automatisé avec accès télématique, à tout le réseau C.N.D.P. (C.R.D.P., C.D.D.P., C.L.D.P. et services centraux), l'établissement disposerait d'un système cohérent de traitement et d'accès aux documents existant dans le réseau permettant:

— sur la base d'un partage des tâches, d'éviter les doublets (un seul traitement pour un même document, même s'il est acquis par chaque point du réseau; le premier à l'acquérir fait le travail d'entrée, les suivants n'ont plus qu'à se signaler comme possédant le document);

— d'evaluer la pertinence des collections, permettre l'archivage des documents périmés, repérer les lacunes, compléter et améliorer les fonds, notamment en diversifiant les supports.

Une expérience d'utilisation des micro-ordinateurs

Les C.R.D.P. de Lyon et de Grenoble se sont engagés dans une expérience d'utilisation des micro-ordinateurs à des fins documentaires, en coopération avec le lycée Léonard de Vinci situé à l'Isle d'Abeau, ville nouvelle. Equipés de disques durs, les micro-ordinateurs implantés au C.R.D.P. de Lyon et au lycée sont actuellement consacrés au stockage des données sur les ressources disponibles. Ils devront ensuite permettre l'édition de fiches pour les fichiers manuels, l'édition de catalogues thématiques, l'automatisation du prêt et la recherche documentaire automatisée. Chaque document est caractérisé par un descriptif normalisé, une cote de localisation, des vedettes-matières issues du répertoire des vedettes-matières de l'Université Laval de Québec (2). Pour le lycée de l'Isle d'Abeau, l'expérience a également pour but d'insérer le C.D.I. dans le réseau de centres documentaires de la ville nouvelle, qu'ils soient ou non de l'Education Nationale, et de participer ainsi à la mise en commun des ressources et des informations.

Cette expérience est encore à ses débuts; il serait intéressant d'apprécier, quand elle entrera dans sa phase opératoire, l'intérêt que présente le micro-ordinateur pour la gestion coopérative de petits ou de moyens fonds documentaire, et le rôle pédagogique que peut jouer cet instrument dans l'apprentissage — par les élèves — des mécanismes de la recherche documentaire informatisée.

Cas particulier: les périodiques

Les services centraux du C.N.D.P. assurent depuis plus de 15 ans un dépouillement mensuel sur fiche catalographique des principales revues auxquelles sont abonnés les C.R.D.P., les C.D.D.P. et les C.D.I. des écoles normales, des lycées et des collèges.

Le dépouillement est sélectif, il porte sur un total de 140 revues:

- — 55 titres donnent lieu à 80 analyses adressées à tous les C.D.I., aux C.R.D.P. et aux C.D.D.P. (revues intéressant l'enseignement des diverses disciplines);
- — 35 titres donnent lieu à 80 analyses adressées seulement aux C.D.I. des écoles normales, aux C.R.D.P. et aux C.D.D.P. (revues intéressant l'enseignement des diverses disciplines, d'un niveau plus spécialisé);
- — 50 titres donnent lieu à 40 analyses adressées seulement aux C.D.I. des écoles normales, aux C.R.D.P. et aux C.D.D.P. (revues sur l'éducation: fonctionnement du système éducatif, méthodologie, technologie éducative, etc...).

Chaque fiche comprend les références complètes de l'article et un résumé de 50 mots environ. Un indice C.D.U. est proposé à titre indicatif en bas de la fiche.

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(2) Un thesaurus adapté aux élèves du second degré est actuellement en cours d'élaboration à l'Institut national de recherche pédagogique.

Les C.D.I. des lycées et collèges reçoivent donc 800 fiches / an de dépouillement de revues; les C.D.I. des écoles normales, les C.R.D.P. et les C.D.D.P., reçoivent 2000 fiches / an. Le service est assuré gratuitement par le C.N.D.P. Son coût d'impression est actuellement de: 500.000 F environ / an. 25.000 fiches ont déjà été produites. Ce service pose un problème d'adéquation plus stricte entre les abonnements des C.D.I. et les fiches reçues. En effet, la liste des revues est arrêtée après enquête, aux titres les plus fréquemment reçus dans les C.D.I., mais des variations importantes existent au niveau du choix des revues entre les C.D.I. du premier et du second cycle, et entre les lycées et les lycées d'enseignement professionnel. Plutôt que de tenter de résoudre ce problème par une diversification des séries entre les niveaux par types d'enseignement, le C.N.D.P. à l'intention de modifier le produit en supprimant le support fiche cataloghaphique (encombrement des fichiers manuels à terme) et en proposant à la place un bulletin d'analyse de toutes les revues reçues dans le réseau, C.D.I. compris. Cette évolution suppose l'emploi de moyens informatiques.

Une coopération avec le Québec qui produit le bulletin Périodex avait été envisagée il y a quattre ans, au moment où le C.N.D.P. s'engageait dans la voie de l'automatisation. Malheuresement le feu vert ministériel a fait défaut et le projet est resté au point mort. Il paraît aujourd'hui possible d'en reprendre l'étude, et de réaliser à terme un instrument commun d'information adapté aux besoins des écoles élémentaires, des établissements secondaires des pays francophones, en associant à sa réalisation les autres partenaires intéressés (Algérie, Tunisie, Maroc, Belgique, Suisse francophone, Luxembourg, Pays Africains francophones...).

Ce projet ambitieux posera très vite le problème de l'acces aux articles signalés dans le bulletin analytique. Sans doute faudra-t-il envisager la création d'un centre spécialisé chargé d'assurer ce service, et utilisant des moyens de diffusion diversifiés parmi lesquels: photocopies, microfiches, vidéotex, télécopie, document original dans certains cas.

Constitution de banques de données spécialisées

Trois secteurs posent un problème particulier dans la mesure où la demande de l'usager n'est plus seulement de disposer d'un catalogue fiable et constamment mis à jour des documents disponibles (et d'accéder rapidement à ces documents), mais aussi d'accéder à données factuelles:

— la documentation régionale;
— la documentation administrative;
— la documentation sur l'éducation.

Documentation régionale

La décentralisation entraîne dans son sillage l'émergence de besoins nouveaux en matière d'information sur la région. Les C.R.D.P. et les C.D.D.P. ont pour vocation spécifique d'explorer les ressources, non seulement en documents, mais aussi en organismes, en lieux, en personnes-ressources. Ils éditent des répertoires des ressources régionales et de nombreux documents imprimés (dossiers de documentation, études) et audio-visuels (le plus souvent livrets de diapos, cassettes) et enfin multi-média (dans le cadre d'une opération intitulée « la France face à l'avenir » qui associe la chaine régionale FR 3).

Plusieurs régions s'engagent aujourd'hui dans la création de banques de données régionales, permettant aux enseignants et aux élèves d'accéder aux informations de toute nature concernant leur région. Il est encore trop tôt pour dire quelle configuration prendront ces banques de données; nul doute qu'elles tendront à terme à la mise en commun de toutes les informations produites ou repérées par les divers services publics régionaux. Signalons à ce sujet la création d'un réseau O.R.I.A.D.O.C. associant déjà plusieurs services publics et l'Association des documentalistes bibliothécaires spécialisés, qui a pour but de recenser les services documentaires existant dans chaque région, de produire des catalogues régionaux, un catalogue thématique et charger le fichier sur Télésystème, permettant à l'utilisateur abonné d'interroger le fichier en accès direct.

Les C.R.D.P. et les C.D.D.P. seront partie prenante dans l'élaboration de ce fichier et dans sa mise a jour.

Documentation administrative

Actuellement, aucune informatisation n'est prévue au C.N.D.P. dans ce domaine (mise à part l'entrée dans la base de Toulouse des questions écrites concernant l'éducation posées à l'Assemblée nationale par les députés et des réponses apportées par le Ministre de l'Education Nationale).

Le C.N.D.P. produit — pour le compte des Ministères de l'Education Nationale, de la Jeunesse et des Sports, du Temps libre — le « Bulletin Officiel » hebdomadaire comprenant les lois, décrets, arrêtés et circulaires.

A partir de cette « matière première », il élabore des instruments documentaires: recueils de textes par niveau d'enseignement, par disciplines, par examen, concours, diplômes, brevets et certificats d'aptitude professionnels, etc..., recueil général de tous les textes règlementaires en viguer, présenté sous reliure à anneaux permettant le remplacement des textes périmés et l'insertion des nouveaux textes. Un index de mots-clés permet de s'orienter dans cette impressionnante masse.

La saisie sur bande magnétique de ces textes, leur traitement et leur édition automatisés (actuellement, l'impression en est encore traditionnelle) ne poseraient de problèmes que d'ordre financier. Ce sont plutôt les modes d'accès complèmentaires qui méritent examen, compte tenu des possibilités offertes par la télécopie à grande vitesse, et par la microfiche. Un accès vidéotex pourrait être envisagé, dans la mesure où ce type d'information est souvent *consulté* sans qu'il y ait forcément nécessité de disposer du texte lui-même sur papier.

D'autre part, la décentralisation de l'éducation, le transfert aux instances régionales d'un certain nombre de niveau de décisions actuellement situés au Ministère lui-même, va inévitablement entraîner l'apparition d'une réglementation régionale. Il convient dès maintenant de s'en préoccuper, afin que le C.N.D.P. soit en mesure de fournir au Ministère de l'Education Nationale — mais aussi à tout citoyen — la compilation de ces règlementations. Si la saisie régionale et départementale ne pose guère de problème, grâce à la configuration de l'établissement, en revanche rien n'est encore prévu pour le traitement et l'édition de ces nouvelles données.

Documentation sur l'éducation

Si l'on examine les fonds documentaires concernant l'éducation et spécialement constitué à l'intention des personnels de l'éducation nationale (*) on constate:

- — absence totale de fonds (mise à part la documentation administrative) au niveau des établissements scolaires. Les C.D.I. ne prennent pas ce secteur en charge et renvoient le demandeur éventuel vers le centre départemental ou régional;
- — fonds limités dans les centres départementaux et plus développés dans les centres régionaux;
- — un fonds national historique (100 ans) spécialisé (bibliothèque de l'Institut National de Recherche Pédagogique, fonds alimenté et analysé avec le concours des documentalistes des services centraux du C.N.D.P.);
- — une base de données en sciences de l'éducation créée par le Centre de Documentation en Sciences Humaines du C.N.R.3. (qui relève du Ministère de la Recherche) qui recense surtout les articles des revues françaises et étrangères sur l'éducation, les thèses, les rapports et un certain nombre d'ouvrage. Elle s'adresse surtout aux enseignants universitaires et aux étudiants en sciences de l'éducation. Les enseignats du primaire et du secondaire ne l'utilisent pas.

Dans toutes les enquêtes menées récemment par le C.N.D.P. sur les besoins en matière d'information. la demande qui concerne l'education vient en dernière position; on peut avancer diverses explications, qui ne s'escludent pas les unes des autres:

- — les enseignants disposent de circuits propres pour ce type d'information: revues pédagogiques générales, revues de spécialités, revues de syndicats, de mouvements pédagogiques, d'association; ils acquièrent les ouvrages qui les intéressent ou les empruntent au centre régional. Une étude statistique reste à faire dans ce domaine. On peut craindre toutefois que l'information ainsi dispensée ne reste très fractionnelle, cloisonnée (niveau, discipline). Les autres catégories de personnel de l'éducation formulent ra-

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(*) Signalons que les enseignants en formation disposent de fonds adaptés à leurs besoins dans les centres de formation.

rement des demandes dans ce domaine, à l'exception des responsables situés aux niveaux de décision (ministère, rectorat, inspections);

— la formation initiale des personnels inclut le recours au document dans le temps de la formation; mais une fois sorti du centre de formation et entré dans la vie professionnelle, le mécanisme de recours aux documents pour résoudre des problèmes méthodologiques ou technologiques est peu ou pas acquis (à l'exception des enseignants appartenant aux mouvements d'éducation nouvelle, au mouvement Freinet, ou de ceux qui s'engagent dans des expériences ou recherches pédagogiques); en font foi les petites ventes des ouvrages pédagogiques, les statistiques de prêt des centres régionaux et départementaux, et la disparition de nombreuses petites revues pédagogiques, dont le nombre d'abonnés ne permet plus de faire face aux frais d'édition.
La situation est heuresusement en train d'évoluer rapidement, sans doute parce que l'utilisation accrue du document primaire dans l'enseignement a conduit les enseignants à se poser de nombreux problèmes méthodologiques et technologiques et par voie de conséquence, à rechercher les informations nécessaires. C'est par exemple ce qui s'est passé lors des expériences de travail autonome (prise en charge par l'élève ou un groupe d'élèves d'une partie du programme, sous le contrôle du professeur), où l'enseignant s'est trouvé confronté à des problèmes d'évaluation des acquisitions;

— parmi les facteurs qui jouent en faveur d'une prise de conscience de l'importance de l'information sur l'éducation, on peut noter: l'accroissement du nombre des articles concernant l'éducation paraissant tant dans la presse nationale que régionale, et l'amélioration qualitative de l'information ainsi dispensé. Seuls quelques journaux à grand tirage disposaient de journalistes spécialisés et compétents. Ce n'est plus le cas aujourd'hui, et le temps n'est plus ou l'éducation ne faisant le une des journaux que lors des départs en vacances, des rentrées scolaires, des grèves des enseignants ou du conflit école publique/école privée. Aujourd'hui, la presse écrite ne parle plus seulement de l'école, mais aussi de l'éducation. En ce sens, elle incite les personnels de l'éducation à lire un certain nombre de documents; mais c'est auprès des parents que ce rôle est le plus net.

> Les C.R.D.P. ont récemment constaté une augmentation de la demande dans ce domaine, et ils ont aussi constaté une diversification des besoins. Si la demande traditionnelle (documents en prêt, compléments bibliographiques) reste importante, une nouvelle demande émerge au niveau des enseignants, qui commencent à rechercher la « littérature souterraine », c'est-à-dire à ces études, rapports, compte-rendu de stage et de journées, d'expérimentation, etc... littérature élaborée par les enseignants dans le cadre de leurs rencontres, institutionnelles ou non. Le C.N.D.P. est d'autant mieux placé pour répondre à ce besoin qu'il accueille dans ses centres régionaux et départementaux une grande partie de ces rencontres et en publie bien souvent les comptes-rendus. La diffusion en reste régionale ou locale. Il est donc nécessaire de poser en termes nouveaux le repérage, le stockage et la communication des documents concernant l'éducation, dans la mesure où la demande évolue vers une plus grande consommation de données textuelles.

Un dernier élément — qui sera sans doute déterminant — intervient dans notre analyse: l'amélioration de la formation initiale et continue des enseignants, considérée comme une priorité par le Ministère de l'Education Nationale; celui-ci a rendu public récemment les travaux d'une commission d'étude prévoyant la mise en place d'un réseau de formation associant au plan régional les divers partenaires (dont les C.R.D.P. et les C.D.D.P.) et le développement des ressources pédagogiques, leur diffusion, la circulation des idées et des innovations. Le rapport accorde une importance primordiale aux sciences de l'éducation, « jusqu'alors maintenues en arrière-plan ou en sous-développement dans les universités et même, quoique à des titres divers, dans les centres de formation ».

Le retour régulier en formation des personnels en exercice entrainera sans aucun doute le développement de la demande d'information.

Les enseignants et les autres catégories de personnels de l'éducation ne sont pas seuls concernés par ce type d'informations; les parents deviennent également plus exigeants et s'intéressent d'une manière beaucoup plus fréquente au fonctionnement du système d'éducation, aux mèthodes et techniques employées et aux conditions de travail des enfants — une expérience est actuellement menée par le Département des Sciences de l'Education de l'Université de Toulouse-Le Mirail tendant à developper une coopération entre parents et enseignants au niveau des pratiques éducatives. Le projet, intitulé ARPEGE, est financé par la fondation hollandaise Van Leer; il a permis de faire la lumière sur les besoins importants d'information sur l'education, tant des parents que des enseignants eux-mêmes. Les responsables des collectivités locales et régionales sont egalement des demandeurs potentiellement importants, dans le cadre d'une extension de leurs responsabilités en matière d'éducation, consécutives à la décentralisation.

Enfin, ne peut-on rêver un peu et penser qu'un signe certain de bonne santé d'un système d'éducation serait de voir émerger une demande d'information sur ses finalités, son fonctionnement et ses méthodes, de la part de ceux-là même pour lesquels il est (en principe) fait: les élèves, les étudiants, les adultes en formation? Et ne doit-on pas prévoir ces mécanismes d'information, dans le même temps où l'on préconise une participation active de l'enseigné à sa formation?

Informatiser, télématiser...

Les nouvelles technologies de communication de l'information posent tous les problèmes documentaires en termes nouveaux, notamment dans le cas où il existe une forte demande de données factuelles.

Les nouvelles technologies se profilent à l'horizon du court terme en même temps qu'un nombre de plus en plus grand d'utilisateurs remettent en question les systèmes automatisés, le jugeant souvent inéfficaces, coûteux, rébarbatifs (tant au niveau du conversationnel qu'au niveau des produits: bulletins, bibliographies...).

Il est certain, et nous l'avons déjà dit, que la base de données du C.N.R.S. est conçue pour un public universitaire, ne répond pas aux besoins des enseignants du primaire et du secondaire, qui recherchent davantage des éléments leur permettant de confronter leur pratique quotidienne à celle de leurs collègues, une littérature de qualité mais moins spécialisée.

Un autre élément est absolument déterminant: l'interrogation de cette base est coûteuse. Il n'y a aucune raison pour que les enseignants aient à payer pour accéder à cette information nécessaire à leur activité professionnelle — ce doit être un service que leur doit le Ministère, leur employeur, et ils le perçoivent comme tel —.

Ce point de vue vient d'ailleurs d'être confirmé par une enquête très intéressante menée en Décembre 1981 par deux étudiants du centre de formation supérieure au management, sur « l'analyse des besoins pour une banque de données dans le domaine de la pédagogie », l'objectif de l'enquête étant de répondre à la question « existe-t-il un marché pour telle banque de données? ».

Les auteurs constatent qu'il n'existe (en France) aucune possibilité pour un établissement d'enseignement ou de formation, ou pour un enseignant, voire une entreprise, de s'informer de façon efficace sur les méthodes et les moyens déjà mis en oeuvre en fonction d'un objectif donné ». [...] « une banque pédagogique pourrait constituer pour les divers organismes — et plus largement pour les pays de langue française — à la fois une source d'informations bibliographiques et *surtout factuelles*, un outil de communication entre enseignants, et un support pour la réflexion et pour la formation des enseignants sous l'angle de la théorie de l'apprentissage, des pratiques, pédagogiques et de l'organisation globale des enseignements.

Le domaine de la pédagogie se prête à une rencontre de l'information théorique et pratique. Il apparaît aussi que peut être testée l'idée d'un « produit intégré » qui couvrirait à la fois la demande d'information sur la bibliographie, sur les expériences et les supports auxquels elle sert de cadre de référence, sur leur mode d'utilisation et d'évaluation.

Les auteurs ont mené leur enquête sur la base de cinq questions:

— une banque de données en pédagogies est-elle utile?
— pourquoi est-elle utile?
— de quelle manière l'est-elle?
— Selon quelles modalités?
— A quels coût?

L'échantillon d'utilisateurs potentiels était pris dans quatre secteurs:

— entreprise (service de formation)
— grandes écoles, universités
— enseignement secondaire (ce dernier secteur a dû être abandonné faute de contacts pertinents).

Bien que les enseignants de l'enseignement secondaire n'ait donc pas été inclus dans l'échantillon, les résultats n'en recoupent pas moins ceux d'enquêtes menées par le C.N.D.P. sur les besoins en information.

En résumé, l'enquête conclut que, pour les utilisateurs potentiels:

— la banque de données est utile;
— elle apporte une réponse aux besoins pour se documenter et s'informer sur d'autres pratiques;
— il s'agit davantage d'une banque de services que d'une banque de supports;
— elle peut faciliter les échanges au sein d'un réseau général, ouvert sur l'étranger [...];
— elle n'est pas conçue comme un outil de formation type enseignement assisté par ordinateur [...] elle doit aider à la conception plutôt qu'à la réalisation pédagogique;
— la demande est plus forte en informations liées à la planification pédagogique et moins en données matérielles, instrumentales et circonstancielles, par exemple sur les organismes de formation;
— l'information est jugée indispensable pour le fonctionnement d'un tel système:

    actualisation des données
    rationalisation des moyens
    accès plus rapide de l'information

— pas de préférence pour tel ou tel système informatique, mais les attentes des utilisateurs s'orientent vers une banque partiellement décentralisée et sous contrôle de l'utilisateurs;
— l'entrée des documents *ne peut pas être libre*: un contrôle effectué par un organisme technique compétent est souhaité;
— le producteur pourra, à tous moments, contrôler l'information;
— le dossier thématique semble être le document modèle requis par les utilisateurs potentiels;
— enfin, et ce point n'est pas le moins important, dans le choix des banques, celles peu coûteuses viennent en tête: les utilisateurs potentiels semblent considérer que l'information doit être un service (subventionné?) plus qu'une *marchandise que l'on achète*.

Sans doute peut-on penser que ce comportement est induit par un long passé de gratuité scolaire et une résistance farouche à tout ce qui porterait atteinte à ce principe de service public.

A divers point de vue, cette enquête est intéressante; elle permet de dépasser le modèle traditionnel des bases des données et de dessiner les grandes lignes d'un système mieux adapté aux besoins réels des enseignants.

Produits documentaires

Le C.N.D.P., comme tout centre national de documentation, met à la disposition de ses utilisateurs divers produits documentaires. Nous avons décrit plus haut le dépouillement des revues pédagogiques qui donne lieu à l'édition de « fiches analytiques de revues », nous n'y reviendrons donc pas.

Le C.N.D.P. diffuse de nombreuses bibliographies, sur des thèmes intéressant l'enseignement (liés aux programmes ou non — notamment sujets d'actualité), sur des sujets concernant l'éducation elle-même.

Le bibliographies sont rassemblées dans une collection « Références documentaires », certaines d'entre elles sont mises en vente, les autres sont disponibles gratuitement dans les C.R.D.P. et les C.D.D.P. Les sujets sont le plus souvent liés à des demandes des C.R.D.P., des C.D.D.P. Bien entendu, les bibliographies sont conçues en fonction des besoins spécifiques de l'éducation: elles font une large place aux documents audio-visuels, elles offrent une sélection de documents utilisables directement par les élèves et les documents fondamentaux plutôt destinées aux enseignants. Les bibliographies constituent des guides précieux pour les documentalistes des C.D.I., des C.R.D.P. et des C.D.D.P., qui peuvent ainsi vérifier leurs propres fonds sur le sujet, et le compléter le cas échéant.

Les services centraux du C.N.D.P. viennent de mettre en place un service de recherche bibliographique destiné à répondre aux demandes des centres régionaux et surtout départementaux, qui ne disposent pas de moyen de recherche documentaire (personnel, centres de ressources à proximité).

C'est a Paris que sont encore concentrées la plupart des ressources documentaires; il est important que les services centraux puissent participer à la dissémination de l'information scientifique et technique, tant pour les références des documents que pour les documents eux-mêmes (notamment par transfert sur microfiches).

De leur côtes, les C.R.D.P., les C.D.D.P. produisent des bibliographies sur des sujets d'intérêt régional, mais aussi d'intérêt national s'ils en ont les moyens, ou dans le cas d'opération « d'intérêt national » qui peuvent leur être confiées.

Les même schéma est applicable aux dossiers de documentation produits par l'établissement. Au niveau des services centraux, une collection « Dossiers de Documentation » a été mise au point en concertation avec des documentalistes des établissements scolaires. Ces « Dossiers » rassemblent, sur un sujet d'intérêt national, des documents primaires, quelques illustrations et des références à des documents, conçus par fascicules séparables, ils permettent aux élèves de travailler en équipe sur les divers aspects du sujet et de rechercher des documents complémentaires, soit au C.D.I., soit à la bibliothèque pubblique, s'il y en a une à proximité. Le produit documentaire est donc aussi un produit pédagogique. Il prend sa place tout naturellement dans la gamme des dossiers que constituent en permanence les documentalistes des établissements scolaires à l'intention des élèves.

Les centres régionaux et départementaux élaborent un nombre considérable de recueils de documents sur la région en utilisant ou en combinant les divers supports graphiques et audio-visuels.

Mentionnons pour mémoire les catalogues, les listes d'acquisitions, les nombreux bulletins d'informations pédagogiques diffusés sur le plan régional, souvent avec le concours des associations d'enseignants, des mouvements pédagogiques, des inspections pédagogiques.

Que deviendra cette production traditionnelle lorsque seront devenues réalité les perspectives ouvertes par l'évolution technologique en matière de diffusion d'information? Même s'il est encore tôt pour le dire, on peut penser qu'un certain nombre d'entre eux seront transformés, notamment les plus coûteux (diffusion sur support papier, ou certaines productions audio-visuelles). La croissance certaine des équipements en magnétoscopes pose pour le C.N.D.P. le problème de constituer des médiathèques en transférant sur vidéo-cassettes, support particulièrement adapté aux pratique pédagogiques, toute une série de films scientifiques et documentaires difficilement accessibles, voire des films de fiction dont la découverte et l'étude deviendraient enfin possibles, de même que l'étude de pièces de théâtre, autrement que sur le seul texte.

Ne peut-on penser aussi que se construiront à partir de ce support, des « dossiers documentaires audio-visuels? ».

Fréquemment sollicité par les pays en développement, francophones, le C.N.D.P. ne pourra-t-il construire avec eux des programmes de diffusion d'informations et de documents répondant à leurs besoins — diffusion que la transmission par satellite rend possible? Il aura à examiner l'apport de ces nouvelles technologies dans la perspective de combler l'écart d'informations entre pays riches et pays pauvres, à un tournant de l'histoire où se vérifie que la course à l'information est plus encore qu'une course à la culture au sens large, une course au pouvoir (au niveau social les riches s'équipent en premier et leur enfants en bénéficient, au niveau des nations elles-mêmes, les pays riches enferment les pays pauvres dans des monopoles technologiques).

Les nouveaux supports: vidéo-cassettes, vidéo-disques, permettent un accès souple, décentralisé et personnalisé à l'information; la télématique permet maintenant d'accéder facilement aux bases de données; les systèmes inter-actifs permettent de nombreuses situation d'apprentissage individuel.

Sur le plan local, les systèmes de cablodistribution vont démultiplier l'information locale et régionale.

La télévision va cesser d'être un instrument de diffusion massive à horaire fixe. Le petit écran va devenir un espace d'information que l'école doit apprendre à utiliser pour l'enseignement, et qu'elle doit apprendre aux élèves à utiliser à bon escient, d'une manière critique et pertinente par rapport aux besoins.

La maîtrise de l'information — matière première — pèsera de tout son poids économique et culturel dans les deux prochaines décennies.

Comment le C.N.D.P. saisira-t-il la chance d'une mutation technologique, pour la mettre au service de l'éducation et non, comme certains exemples dans le domaine de l'équipement audio-visuel peuvent le faire craindre, pour favoriser un développement industriel sans ancrage dans la finalité éducative?

Quels que soient les moyens dont dispose un pays en matière de documentation pédagogique, que ces moyens soient traditionnels ou sophistiqués, le problème fondamental reste celui de l'éducation à l'information et le rôle que doit jouer le système éducatif dans cette formation du futur citoyen.

C'est tout le problème de la démocratisation du savoir.

C'est à l'école que doit se faire la prise de conscience des enjeux politiques, philosophiques, éthiques, de l'accès à l'information. Or, tant que notre système éducatif restera fondé sur un rapport de force ou de pouvoir: « celui qui sait / celui qui ne sait pas », il y a peu de chance que cette prise de conscience s'effectue. Elle suppose en effet un changement radical de comportement: concevoir que chacun est porteur d'information, et que celles dont l'élève est porteur sont au moins aussi importantes que celles que l'enseignant a pour but de communiquer, du moins si ce sont s'autres valeurs que les strictes valeurs scolaires qui prévalent. Qui (hormis les enseignants des mouvements d'éducation nouvelle) se préoccupe de faire émerger et d'utiliser les informations dont sont porteurs les élèves? Ne serait-ce pas le premier pas d'un apprentissage fondé sur le respect mutuel, qui amènerait l'enfant à construire son propre savoir en utilisant toutes les ressources disponibles, son professeur étant l'une d'entre elles parmi d'autres, mais aussi celui qui va faire en sorte que les mécanismes — les savoir-faire — soient bien ancrés? La démocratisation du savoir suppose une pédagogie réciproque; ce n'est pas un hasard si c'est le mouvement pédagogique Freinet qui a sû mettre en oeuvre cette pédagogie, qui a aussi mis l'accent sur l'importance de la recherche d'information par l'élève, sur la restitution par l'élève lui-même et selon des modes qui lui sont propres, de cette information, créant ainsi cette célèbre collection de mini-dossiers documentaires, faits par des élèves pour d'autres élèves? Et qui a su aussi développer une véritable centrale documentaire, produisent les revues, les documents nécessaires pour l'amélioration pédagogique de ses adhérents, élaborés dans la pratique pédagogique par des enseignants pour d'autres enseignants, reprenant à son compte en quelque sorte les principes d'un enseignement mutuel affirmés en France tout au long du 19e siècle.

Le Ministère de l'Education National entend changer progressivement et en profondeur, le système éducatif français, en les mettant en mesure de maîtriser pour eux-mêmes les moyens d'information, en les format aussi à devenir des médiateurs entre l'élève et le savoir, entre les supports d'information et les machines qui rendent ces supports accessibles et ceux qui auront à s'en servir, après l'école, dans leur vie de citoyen, dans leur vie professionnelle, et à leur tour, dans l'éducation de leurs propres enfants.

Dans le cadre d'un travail de groupe inter-régional, le C.N.D.P. a jeté les bases d'une formation méthodologique des enseignants (cf. document en annexe) (3).

Dès cette année, le Ministère de l'Education Nationale formera une première « tranche » d'enseignants et de documentalistes à l'intégration du document dans l'enseignement (de la recherche de l'information à son exploitation et sa restitution par l'élève).

Ainsi, peut-on espérer que seront jetées les bases permettant à chaque élève de construire son savoir et de maîtriser les outils d'information.

Annexe

La maîtrise de l'information par chaque citoyen est un enjeu vital pour la société de demain, que l'école ne peut, ne doit pas sous-estimer. C'est sur cette capacité que reposera au delà de la démocratisation du savoir, celle de la société elle-même, d'une société fondée sur le débat et le consensus.

Le droit à l'information est un mot creux si les citoyens ne disposent pas de moyens nécessaires pour l'exercer.

C'est pourquoi l'éducation doit se préoccuper, dès aujourd'hui, de développer une stratégie de formation au terme de laquelle toute personne sera, à l'issue de son cursus scolaire (court ou long), en mesure de s'informer et d'informer autrui, que ce soit dans le cadre de vie communautaire, dans le cadre de vie professionnel et dans ses étapes préparatoires, depuis la formation courte jusqu'aux formations les plus longues et les plus spécialisées; il sera enfin capable d'entretenir son information, de la comparer et de la critiquer constamment, de l'intégrer comme un véritable « réflexe » dans son activité d'adulte.

Le C.N.D.P. a un rôle spécifique à jouer dans la mise en oeuvre de cette stratégie de formation.

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(3) Projet pour une formation des enseignants à l'utilisation pédagogique de la documentation. Besançon: C.R.D.P., 1979.

C'est a Robert Escarpit (4) que nous laisserons le dernier mot: « qu'on la porte en soi ou qu'on l'attende des autres, l'information ne vient que lorsqu'on l'appelle, que lorsqu'on la gagne, que lorsqu'on la fait. Et alors, son nom est Liberté ».

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(4) *Théorie de l'information et pratique politique*. Paris: Seuil, 1981. 219 p. - I.S.B.N. 2 02 005 834 4.

Elin Ekman

Information on actual Educational Research in Sweden and on Educational Documentation

STATENS PSYKOLOGISK - PEDAGOGISKA BIBLIOTEK

Educational research in Sweden is mainly located at the university institutions for education and psychology. The teacher education colleges belong now to the universities.

I am taking education in a very wide sense: school, adult, vocational, special, continuing and university education methods.

The research in Sweden is usually organised in projects, financed by grants from various bodies, mostly state agencies.

An educational researcher has to make a project plan with aims, methods, time scheme, cost estimates for salaries, statistical and data processing etc. In the project plan is the estimated time for the project by importance. The project leader is usually a university professor. Many doctoral dissertations are reports from projects.

Sweden has an administrative system, different from most European countries. The Ministry of education is handling budget estimates to the Parliament and the general educational policy. For education two civil service departments are of importance, one for the schools, one for the universities. They have a great responsability for research and development in their sections: The Board of Education has for 1982-83 30,5 millions Swedish crowns, the regional school administration centres 5 millions, the Board for the universities 13 millions. The research council for the humanistic and social sciences has about 2 millions.

Of course a researcher can also have grants from other sources, private funds etc. Much research, handling educational problems have grants from health and medecine bodies.

Research policy is very actual at the moment in Sweden. In a government bill to the Parliament this year are among others priorities decided for social welfare, ecology, equality, technical development.

The information about research and coordination of grants are things of great importance as well as the education of researchers.

The Swedish research projects are usually going on in 2-3 years. The results are published in reports — the start is often a report containing a presentation of the project, then several reports of various problems or parts of the subject and then a final report. The project leader has to send an annual report to the grant authorities. They can there evaluate the future grants to the project.

As in many other countries there are discussions on how to give infomation about what's going on, to whom (politicians, decision makers, other researchers, the press etc.).

In 1974 there was a report « Central documentation service in education. Report and proposals from the projects for educational information », published by SPPB. The proposals are atill actual: Skolöverstyrelsen och Universitets- och högskoleämbetet publish annual catalogues (in Swedish) reporting their granted projects. They also publish information letters on new projects of importance. An English version is available.

SPPB published two catalogues in English and is now sending such information to the Council of Europe EUDISED E & D bulletin. The projects, presented in this publication, are estimated as interesting people in other countries. The presentation of projects is foreseen to be used by other researchers or others, who then can contact the special project they find interesting.

As I already mentioned the Swedish research projects are going on for a limited time. There is a problem of announcing the ceasing and where to find the final report. I think a computerized system will be most useful for that purpose.

The Swedish educational research results are most frequently published in various institutional series (mimeographed). They really belong to the « grey » literature. Sometime they are published in journal articles, not very often as books according to the higher costs and the foreseen limited number of sold copies. Our doctoral dissertations are today very frequently a summary of results + earlier published reports and journal articles.

The problem is to know: what's published and where. The printed publications are of course in the national bibliography, based on duty copies sent by the printers to the National Library. All the other material is more difficult to find.

The university libraries have the intention to put in information about material, published by the different university institutions, in the Swedish library system, LIBRIS. A problem: you can't search through keywords or subject system in LIBRIS and the material is only available to Swedish libraries with access to LIBRIS.

SPPB has a special responsability in this field. We are analysing the material quite deep in our catalogue and have a very complete collection of material. We are also analysing the most important articles by Swedish researchers in scientific journals.

According the proposals in the report of 1974, mentioned earlier, we are publishing an annual catalogue « Swedish behavioural science research reports », an abstract publication containing the reports our researchers find should be of interest to an international audience. The catalogue is sent as an exchange publication to librairies and research institutions all over the world.

There is a subject index with keywords from EUDISED and PSYCHINFO.

The catalogue is divided in subject fields. You may there find information on the actual research subjects. Through the presentation in the abstracts the user can easily find if a report is of importance to him or to her. Through clear information on institutions the user may find the report accessible through the producing institutions or through interlibrary loans (SPPB or other research libraries).

It is to underline that the report listed in this catalogue must be of interest to an international public. The institutions are responsible for the quality. The institutions receive sheets from SPPB and one of our librarians is then indexing the material.

About 1.200 items are now in a database, SBS, on line in Göteborg. The experimental searchs were quite good. We hope to put the material directly in the computer and then have the annual catalogue as a product from the computer — a printed catalogue is still needed. Very many researchers and institutions have no access to SBS data base.

In Sweden there is a demand for such a publication for the Swedish public containing more material and in Swedish. SPPB has the intention as soon as possible to put such material in a computer. The thesaurus problems have to be solved. The EUDISED thesaurus must be translated — that's not so difficult — but we need to analyse and find completing Swedish terms. A co-operation between researchers and librarians will give the best results. SPPB is seeking grants for such a projects.

I have also to mention here that the Scandinavian countries have common interests in making our research results available to people in the other countries. The plans for a Nordic database for education and psychology are very advanced. For education we are going to use the EUDISED thesaurus.

The educational research in Sweden today has of course many curriculum projects. Of interest are projects on the milieu in the schools, physical and psychological and social. The integration of handicapped, even children with mental handicaps as well as the integration of children from migrant families in normal classes, has high research priority. The problem of the « two cultures » is actual for the migrants.

How to evaluate the information needs and the quality level of information? The ways of information are also an inportant question. Much information is given through personal contacts, many institutions have a special profile. The aim of the project information is to make it easy for persons interested in a subject or a special problem to contact a project leader. There is no statistic in that case but many researchers say that the number of questions from abroad is increasing.

To evaluate Swedish Behavioural Science Research Reports is'nt easy either. The use of the various research reports may increase, but the research reports are often already in the institutional library. We have the experience at SPPB that many Swedish researchers are using this catalogue for information about actual research in Sweden. It is difficult for a librarian to know the information sources — only the reference lists from computerized search let us know the source.

WILLEM F. DE REGT

Educational Policy Documentation in the Netherlands

MINISTRY OF EDUCATION AND SCIENCE
Central Documentation Department

74

Introduction

To understand rightly the role of social science information in the service of Dutch education policy it is in the first place necessary to describe in a few words the particular characteristics of its education system.

The Netherlands Constitution guarantees the freedom of education. That is to say that education is being considered a continuing source of attention for the Government. The Government should, or rather shall — provide the facilities which allow the educational system to function properly.

The form and content however are the prerogatives of the people. In the Netherlands' schoolsystem it is guaranteed that the individual has the freedom fo provide and to receive the kind of education of his choice.

The education policy

Education policy in the Netherlands is therefore always twofold. At the one side is the policy of the Central Government, at the other side the policy of the educational institutions, in which the parents and the receivers of education have organized to exercise their constitutional rights.

Starting thus from different points of departure, there is however a general agreement as to the basic objectives of education. Education as it is seen in the Netherlands, should have a threefold aim:

- It firstly aims at the social and cultural development of the individal;

— It secondly prepares the individual for a productive life and
— Finally it prepares him or her to fulfill a role in society as a conscious participant in social and cultural processes.

Education policy in the Netherlands has however still another aspect. The history of the Netherlands, because of its geographical and economic situation, shows that it has been strongly influenced in various ways by surrounding countries and also — because of its colonial past — by countries in other hemispheres.

The Dutch have therefore grown up with an international scope and are convinced of the necessity and significance of international co-operation.

The constituting elements of the Netherlands education policy are at the one side the examination of existing social needs and recent trends in education and the projection of them into the future and on the other side the exchange of information both from national and international sources.

A realistic approach does not allow projections over long periods. The period covered by the projection of education policy, trends and development is limited to five-seven years or to ten years as a maximum. Since so many multiple factors should be taken into consideration and in view of imponderables which may come into play over a longer period of time, these limitations should be given due attention.

The department of documentation

The provision of documentary information service in support of the Netherands education policy, has been charged to a staff department of the Ministry of Education and Science, the Central Department of Documentation (CDD).

Documentary information service should be understood as the whole range of activities, aiming at the optimal functioning of a process of transfer of documentary information between source and enduser.

For the CDD this information transfer takes place in a rather broad subject field, which may be defined as the field of policy of the Ministry of Education and Science.

In this context the Ministry functions as:

- an organisation with internal lines of communication between management and staff;
- but also as a centre for communication, a kind of network of outside, external relations with parliament, educational organisations, teacher organisations and citizens interested in education. It functions in bi-lateral or multi-lateral forms, both with national and international organisations.

Along the lines of this very complicated network a permanent exchange of information takes place. The systematic exploration of this flow of information is the object of CDD, in so far as:

- the information is related to policy objectives;
- the information has been laid down in documents (conventional or not-conventional);
- the information is publicly available, i.e. in principle obtainable for every citizen.

Put in another way, the objectives of CDD, in the above described framework, are to control the function of information transfer by selecting, processing and disseminating documentary information.

The CDD is a staff department of the Ministry. On the payroll are about 40 people, roughly 1/3 in library work and 2/3 in information work. The director of the department is directly responsable to the permanent-secretary.

Because of its twofold function, the CDD renders its services to the officials and staff of the Ministry and secondly to all those, who have relations with or interest in the educational process and are outside the Ministry. In this way five different groups of users can be distinguished, being:

1 - administrators;
2 - researchers;
3 - teachers;
4 - students;
5 - parents.

Document collection and search data

The information collection of CDD, though strongly integrated, shows two separate collections, i.e.

1. the collection of documents (full text documents or the library in narrow sense);
2. the collection of search data (document surrogates).

The collection of full text documents mainly consists of monographs, handbooks, directories, acts and regulations, research reports and periodicals.

The collection could be described as material ' on education ' and not ' for education '. For this last reason text books and other teaching materials are excluded.

The library collection consists of nearly 50% foreign language books and the approximately 1500 subcriptions to periodicals more than 60% of which in foreign languages, usually English, German and French. The library takes part in the Netherlands interlibrary lending system.

The collection of search data or the data base is the result of a selection and indexing procedure, which basically is directed at one overall objective: the support of education policy. The documentary needs of the user in this field of education policy are for practical reasons distinguished into two main parts.

Firstly in the ' realised policy ', in which field the services of CDD have an attending character and are mainly directed at supplying required information to be found in acts, regulations, parliament papers and other official publications.

Secondly in the ' policy in the making '. This is the field of policy design and preparation, mostly by scientific studies. The services of CDD in this field are of another nature, more common to the work of research libraries and science information centres.

Indexing in the CDD is based on the use of a controlled information language. For this purpose use is made of the Universal Decimal Classification (UDC). From the enormous range of possibilities which the UDC offers to its users, a careful selection of main concepts is taken and with the help of auxiliary tables an Education Code is constructed, consisting of about 2500 descriptors.

The word ' descriptor ' is used to denote a concept, defined in natural language and substituted by a notation. The information system is basically a system using post-coordination in performing searches.

The technical features, of the up to now manually operated information system, makes an easy transition to a computerized system possible. At the moment the system is in a transition stage. The automated documentary information system for education (Dutch: onderwijs) in the Netherlands (ADION as the system is called), uses the IBM programmes STAIRS and TLS for the thesaurus generation.

The transition from the use of a UDC-code to the use of a thesaurus is less dramatical than some people may think. In the CDD system the former UDC-descriptor equals the new thesaurus descriptor. The differences exist therefore in the graphical presentation. This does not mean that no difficulties are met, due to differences in pre-coordination between UDC-concepts and the average thesaurus concepts.

Information services

Besides the common library services, such as reference room and lending activities, the CDD developed special information services to control the yearly incoming stream of thousands of requests for subject information.

A number of different techniques are used to handle these requests as efficiently as possible. Without being complete, the following examples may be an illustration.

The Reference List Service is such an example. It comprises about 600 reference lists on various subjects. This type of subject oriented bibliographies are kept within a limited time period of 5 years and are regularly updated. The lists are only used for answering questions ad have a clear function as time-saving tool in the manually operated information system. After computerizing the system will give still more savings in time and effort.

A second example can be derived from the Pubblication Service. The publication programme meets 3 different aims. The first aim is to supply a current awareness service. The second one is to obtain a means for bibliographical control of current educational literature and the third aim is a reporting service.

Examples of the publications of the CDD are a weekly accession list of the library; a montly abstracting journal on books. reports and periodical articles; a monthly bibliography of newly published educational publications; a bi-annual progress report on the Netherlands' education system and at last a series of description of the local education system or parts thereof for use abroad and published in 4 different languages.

As a third example may serve the Literature Research Service. A literature research project is a rather time consuming activity and therefore normally restricted to the requests of administrators of the highest managerial levels. The search part of a literature research project may be limited to the holding of the department or be extended to the use of online interactive searching in computerized database, offered today by various host organisations. The reports often serve as a source for editorial work in the Publication Department of the CDD.

International co-operation

In the foregoing, it has already been mentioned why in the Netherlands, being situated at the crossroads of many cultures, a natural interest exists in the education policies of other countries.

This part of the paper is limited to a few remarks on international cooperation in education policy. Highlighted are a number of developments on the international scene which seem to be of utmost importance for policy information work. These developments, seen from the point of view of communication and the electronic industries, tend to cause a thorough change in the ways and means of cooperation. The developments at issue may best be illustrated by the examples of the networks, set up by Unesco/IBE, Council of Europe and the European Communities.

The Unesco/IBE activities in Geneva are in fact the continuation of the already long existing work of the Bureau International d'Enseignement.

In 1969 the activities were taken over by Unesco and got a new impulse by the energetic former director Leo Fernig, who with manpower and funds of Unesco, set up a world-wide network of educational information and documentation centres, to serve the decision makers in the field of education policy.

The CDD is one of the 60 nodes in this network and takes an active part in the Cooperative Educational Abstracting Service (CEAS), based on policy documents. The CDD operates as the Netherlands' clearing house for Dutch language documents.

One of the strikingly successful projects of the Council of Europe is the European Documentation and Information System for Education (EUDISED). The main feature of this system is the construction of the Multilingual EUDISED Thesaurus, presently existing in 6 languages versions, with a nearly certain extension to 10 languages.

EUDISED demonstrates itself at the moment in a jointly constructed central database on educational research and development. The selection criteria being of rather high standard, this database proves itself to be of high interest to the policy makers in the respective countries. The CDD takes an active part in these activities and acts as the National Agency in the network.

A rather young new network has the charming name of EURYDICE and is set up under the auspices of the European Communities as a mechanism for the free flow of documentary information, at the first place for the decision makers in the national fields of education policy. EURYDICE accepted the EUDISED multilingual thesaurus as the controlled information language in the network and since then a joint thesaurus management group was set up consisting of representatives from the Commission in Brussels, the General Secretariat in Strasbourg and participating countries.

ANTHONY GWILLIAM

Educational Documentation in the United Kingdom: Developments and Research

NATIONAL FOUNDATION FOR EDUCATIONAL RESEARCH
IN ENGLAND AND WALES

1. *Introduction: Significant Trends*

In the United Kingdom as elsewhere educational documentation is becoming increasingly oriented towards automation by computer and to other modes of information technology. The cooperation of institutions and individuals through ' information networks ' across the field is giving more extensive coverage in greater depth and more diverse and articulated ways to meet users' needs. The massive role of the British Library in conducting and nourishing documentation activity and promoting its Research and Development supports that of the ' nodal ' national centres and the subcentres, whose prime purpose is to generate, process and disseminate their own particular range and type of highly specialised information. Hower, this is not one monolithic system and is unlikely to become so, at least in the shorter term. New and closer interaction of professional information personnel with researchers and other practitioners in their particular areas of concern is signally illustrated by the trend to problem-oriented action research, training and case study approaches to our research and documentation.

' Illuminative ' methodology is used to understand and remedy real information problems which arise in work-situations, opting for flexibility in the investigative procedures employed. Also the operational definitions of documentation and the role concepts of documentalists seem to have broadened, although utilization of specialised subject knowledge must surely remain integral to our work. Yet the traditional Bradfordian definition of documentation as the ' recording, organisation and dissemination of specialized knowledge ' (in ASLIB'S « *Journal of Documentation* », 1945) has shifted to a broader notion of information handling in which nevertheless the elements of evaluative information analysis, and synthesis in reassembly and presentation to the user are still fundamental. Only these can put flesh on the bare bones of information technology — data input, storage, transmission and output. The above-mentioned considerations may serve then as ' hatpegs ' for some perspectives on the current scene and furnish some unifying threads traceable and interwoven through an outline review of U.K. educational documentation.

2. *The Role of the National Foundation for Educational Research*

2.1. I will at this point introduce my own institution, the National Foundation for Educational Research in England and Wales (N.F.E.R.). It is the leading specialised educational research institution in the U.K., and is certainly the largest. It conducts projects on issues of current interest in any sector of the public education system and *disseminates* findings from its own and other sources through the Information Services, associated Information and other Projects within the Research Division, and the NFER-Nelson Publishing Company. The major part of funding, especially for Projects, comes from external public sponsors but a substantial portion still comes from members' subscriptions. The NFER is in fact an independent body, not part of the Dep. of Education and Science nor annexed to it. Membership is corporate, including the autonomous Local Education Authorithies, Universities, Teachers Associations and virtually all bodies of importance in the public sector of education. Constitutionally the D.E.S. has only honorary and observer status.

Next let us examine documentation work at the N.F.E.R. Manual current awareness services are jointly provided to our Projects and the Publishing Company, by the Press Office, Information Office and the Library and clearly there is considerable room for further development. On-line searching through BLAISE (British Library) and Lockheed DIALOG of educationally relevant data base is available (ERIC, Psychological Abstracts and soon the British Education Index - BEI). Use is charged to Members and their constituents on a cost-recovery basis and to our Projects at a discount rate. NFER project reports, a general research newsletter, project newsletters, and project Research Information brochures are handled by Information

Services, as are critical reviews of research issues. The specialist literature is mostly written by project teams with editorial assistance. Projects negotiate any search profiles with professional information staff and are free to assist in terminal access although their field work and general work load restrict this. Contact within the Research Division between information and research staff is close. Our Editorial Section head is completing reviews of research on the education of ethnic minorities in the U.K. for the Swann Committee and a bibliography on investigations of training for management in schools is being conducted and compiled within Information Services for the workshop on this theme which NFER is hosting for the Council of Europe in September.

2.2. *The Register of Educational Research in the United Kingdom* is a specially sponsored project within Information Services. It is published every two years in hard copy and microfiche, and the next edition will include well over 2000 entries supplied for current projects in Univerities, Colleges, Government Departments, Local Education Authorities and other research organisations - 200 to 300 in all. The very detailed Register index is produced by computer manipulation, but at present the whole Register is later printed from conventional typesetting. Subject indexing follows the English version of the EUDISED thesaurus (adopted from London Education Classification, 2nd ed., 1974). NFER-Nelson Company also publishes the EUDISED *R and D Bulletin* for the Council of Europe. U.K. entries from the register files are input to it manually on worksheets, transferred to master tape by « Peter Peregrinus » Company and the Bulletin is then printed from Computer output microfilm.

2.3. *Educational Policy Information Centre*. A national Unit (Educational Policy Information Centre - EPIC) for the EURYDICE network is situated at the NFER. There is also a Unit for Scotland at the Scottisch Education Dept. in Edinburgh. The prime object of the EURYDICE Unit is to exchange information between educational policy makers in L.E.A.'s or central government bodies and equivalent government bodies and other organisations of public educational policy in other states of the European Community (1). Work has included question-answering involving transfer of relevant documents and production of topic centred digest lists, and summaries of the documents involved as well as a Newsletter and Annual Report. As work-load expands the problem of translating documents for use is becoming acute and the resources so far allocated for operation of the Unit are becoming considerably stretched. Evaluation sheets completed during the service so far provided have been useful. A cardinal feature of EPIC/EURYDICE is that it possesses a Principal Adviser and Steering Committee with background in local and central educational policy making who are able to help with consultancy problems.

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(1) Davies J. (1979), The Educational Policy Information Centre: An introduction

2.4. *The Education Management Information Exchange* - Origins, and Early Developments. In 1978 the emerging U.K. National Centre (EPIC) attracted great interest, particularly from the Local Education Authorities who supported it collectively through the NFER. A pilot study indicated concern for dimensions of information need considerably wider than the EEC education action themes adopted and a feeling among L.E.A.'s that they should exchange information with each other much more effectively (2). This led to the establishment from N.F.E.R. of a new four year project, sponsored jointly with the Society of Education Officers and the DES, to develop experimentally a range of information services aiming to bridge these communication gaps. The EMIE project this seeks firstly to help administrative staff of LEA's and secondly professional and administrative staff of the Department of Education and Science.

Liaison with the EPIC/EURYDICE centre has to be close so as to avoid duplication in the discharge of their respective responsabilities. For istance, EMIE now handles most of the information on falling school rolls and the management of contraction. The acceptance by both these enterprises of enquiries beyond those policy themes and topics to which they currently have to devote most attention is a further reason for liaison. There is a research aspect of illuminative

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and a review of the background of European cooperation, *Education Libraries Bulletin*, 21, 2, Summer, 19-29.

(2) DAVIES J. (1979), 'The Commission of European Communities' educational policy information network: prospects and problems in the UK, *Aslib Proceedings*, 31, no. 8, August, 392-400.

evaluation, with a strong element of ' qualitative ' methodology, to the EMIE Project. Experience with the earlier project INISS (3, 4), favouring that approach to providing information for English social service practitioners, has relevance to the present project. EMIE is problem oriented to the work context and began with initial observation studies and interviews with Education officers. Then the partecipation of link-persons and the Society of Education Officers locally began to promote an appropriately decentralised organisational structure. After a preparatory period services were opened nationally in April 1982. Training seminars for users which should identify and clarify information problems are due to start later this year with project staff taking part and all participants sharing ideas and pooling their individual information expertise. The Project's chief aim is to facilitate person-to-person contacts among the users rather than to the document-based. A computerized data base using IBM Stairs package is being experimentally established to assist EMIE staff in the retrieval of information. However, the character and extent of any document collection would depend on ascertained user reactions and needs (5).

Much information has also to be treated as confidential but it is thought that the system may steadily become less ' restricted ' and access more topics and materials to a wider spectrum of users. The Project's development options overall will be kept open so as to be responsive to discernible changes in the patterns of user needs and any other relevant circumstances. Later evaluation of the service would also be flexible, in line with the illuminative approach of the experiment. Meanwhile a prominent feature of the project currently is its effort to pursue a policy of quality control and provide evaluated information, not only in a forthcoming series of consultancy papers but in its abstracts, newsletters and enquiry replies.

The activities at NFER just described, although obviously not fully

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(3) Streatfield D. R. and Wilson T. D. (1980), Information services in English social services departments: implication of Project INISS, *Behavioural Social Sciences Librarian*, 1, 3, Spring, 189-199.

(4) Streatfield D. R., Pritchard J. H. and Wilson T. D. (1981), Assessment of an illuminative evaluation programme for information services, *Aslib Proceedings*, 33, 2 February, 67-70.

(5) Streatfield D. R., Wilson T. D. and D. Clark (1981), A problem-based training approach to information for practitioners, *Libri*, 31, 3, 243-57.

representative, point to much of importance. They suggest both strengths and deficiencies in the British R & D situation for our field. These invite further and more wide-ranging review.

2.6. *Primary Sources*. Looking again at registers of current educational research the persistence of registers covering work in one particular special field or geographic locality is noteworthy. For instance, these exist for reading teaching and research, language teaching and research (CILT), adult and continuing education, educational guidance counselling (NICEC), library and information science (RADIALS Bulletin), and for Northern Ireland (NICER Register) as well as the Open University's Faculty of Educational Studies. Also after a long discontinuance of a register on special education, there is now interest in restarting one, possibly indexed by the EUDISED thesaurus, which would facilitate any future links with the NFER's ' Register of Educational Research '. Although the latter includes relevant work in the social sciences, the British Library (BL) Research in British Universities, Polytechnics and Colleges. Vol. 3 Social Sciences (2nd ed. 1981) is probably the best guide for inter-disciplinary approaches.

2.6.1. The primary Communications Research Group based at Leicester University and supported by the British Library (BL) investigates problems of primary communications, genesis of primary materials and scholarly publishing (6, 7). The Textual Communication Research Group of the Open University is also very active. Educational specialists are substantially involved and are showing interest in prospects for ' electronic publishing ' with its clear relevance for education. CORE (Collected Original Resources in Education) is a recent international journal for reports, bibliographies, reviews etc. in 24x microfiche from Carfax Publishing Company.

2.6.2. There are more short original reports or communications in academic journals like NFER's ' Educational Research ', and also in newsletters. The ' Guide to Sources for the History of Education '

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(6) Scholarly Publications Guide: New Methods and Techniques, 2nd ed. Leicester University, PCRC 1978.

(7) GORDON M. (1978), A Study of the Evaluation of Research Papers by Primary Journal in the U.K. Leicester University: PCRC.

and its Supplements, edited by C.W.T. Higson (Librarian, Leicester University School of Education) and the Birmingham Union Catalogue of monographs held in Institutes and Schools of Education still remain excellent keys to source materials — both fruits of library cooperation organised by the Committee of Librarians of Institutes and Schools of Education (LISE).

2.6.3. In the expanding area of audio-visual materials there was a joint BL/Inner London Education Authority project on the problems of bibliographic control of those resources (8). Subsequently BL has published the ' British Catalogue of Audio-visual Materials, and a Supplement to it, indexed by BNB's PRECIS system ' (9).

2.6.4. By lodging reports with the British Library Lending Division (BLLD) investigators may also give wider currency to reports and the separate data appendices and statistical reports which quite often accompany them and are of little value without the main report. Dissemination is then mostly by microfiche and film. Frequently both authors and sponsors prefer to keep their own reports and retain control of them. Increasingly Universities lend their theses (dissertations) in microfilm, but few either deposit them with the BL Lending Division or make them commercially available.

2.6.5. The BL's Lending Division is involved in the promotion of the European Commission's SIGLE Scheme (System for Information on Grey Literature in Europe) for the more effective collection and control of non-conventional or ' grey literature '. Such as reports not commercially published. The breadth of the Library's existing holdings and its contacts with UK centres in social sciences, including education, enhance its contribution. It publishes the list ' British Reports, Translations and Theses ' monthly. The SIGLE manuals (10) provide guidelines for cataloguing and magnetic tape formats compatible with EURONET-DIANE and subject categories adapted from those of COSATI. Under Field 05-Behavioural and Social Sciences some agreement has recently been reached on the establishment of Education as a separate group, now categorized in outline.

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(8) Ferris D. (1979), Developments in the bibliographic control of audio-visual materials: the BC/ILEA Learning Materials Recording Study, *Education Libraries Bulletin*, 22.2, Whole 65, Summer, 28-37.

(9) British Catalogue of Audio Visual Materials: a subject catalogue of audio-visual materials processed by the British Library/Inner London Education Authority Learning Materials Recording Study. London: British Library Bibliographic Services Division, 1979. Supplement(s) 1980.

(10) SIGLE Manual. Part I. SIGLE Cataloguing Rules. Pt 2 Subject Category List. Part 3 Magnetic tape formats Technical Processing Centre C.E.A. - Cen Sacley, Service de Documentation 81191 Gif-sur-Yvette Cedex. February 1981.

3. *Secondary Sources and Services: Abstracting, Indexing*

The last major survey based analysis of secondary bibliographic services for education in the UK was that of Dai Hounsell and others at Lancaster Univeristy in 1978 as part of British Library Project on Experimental Information Services for Education (11). A later overview by Swift, Bramer and Winn (12) agreed that larger services with more rationalization of coverage and utilization of computer techniques on a network basis could develop. The *British Education Index*, taken over by the BL in 1976 and given PRECIS indexing is to go ' on line ' through BLAISE later this year. This offers great prospects for retrospective searching and current awareness. SDI. PRECIS (Preserved Context Indexing System) is a precordinate system developed for use in ' British National Bibliography '. None of the substantial objections raised against it on grounds of reactions by user (13, 14) and indexers (15) seem likely to imperil its future, although adaptations should surely continue to be made in the interests of service. Greaves in 1978 has reported interestingly that a BNB sample had more terms in common with ERIC than any other system. The smaller specialised abstracting services in particular like ' Sociology of Education Abstracts ' and Language Teaching and Linguistics: Abstracts (CILT) are not computerized and inevitably suffer from financial constraints. They are intended for direct use by the research community, and the ' multi modal ' indexing approach of S.E.A. in terms of researchers conceptualization of their field was a brave experiment. It arose from an original case study (OSTI report 5171 of 1973) which has since been well summarized (16). There could still be a growing specialist clientele for these services, notably overseas, but it is questionable how far researchers rather than say librarians use these tools. Winn and Bramer are doing quite separate but relevant work on a thesaurus of terms for the sociology of education, deriving from a socio-historical study of the recent development of ideas in this area and which may provide the basis for an ' expert system ' comparable, for example, to MYCIN.

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(11) Hounsel D. and others (1978), Bibliographic Services in Education: A Survey and Analysis of Secondary Services in the United Kingdom, Sept. 1978. (BLRD Report LP5447). University of Lancaster, Centre for Educational Research and Development.

(12) Swift D. F., Bramer D. A. and Winn V. A. (1979), Some problems in the organisation of abstracting services, *Education Libraries Bulletin*, 22.2, (whole no. 65), Summer, 19-27.

(13) Peters H. (1981), User reaction to PRECIS in the British Education Index, *Ed. Libraries Bulletin*, 24, 2, whole 71, Summer, 20-31.

(14) Hall A. W. (1982), British Education Index: The User's problems, *Education Libraries Bulletin*, 25, 1, Spring, 19-23.

(15) Bakewell K. G. (1979), Indexers' reactions to PRECIS, *J. of Documentation*, 35, 3, 164-178.

3.1. Problems of textual translation and terminological ambiguities arising from mother tongue and national cultural differences create problems throughout the educational field and appropriate translators in the UK seem to be both scarce and expensive.

4. *Dissemination: Developments and Research Implication for Organisers and Users*

4.1. There are a variety of experimental options in the area of *educational technology* besides relatively orthodox ' on line ' main frame communication. Appropriate software is a problem for effective local interface there and for the micro processing in general. Graphic display by video cassettes, discs, teletext and view data systems could be used rapidly and selectively. Perhaps the Open University's OPTEL Viewdata experiment in communicating with local tutors has been the most relevant work to date (17), and will no doubt be complemented further in the sphere of continuing and distance education.

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(16) SWIFT D. F., WINN V. A. and BRAMER D. A. (1979), A sociological approach to the design of information systems, *Jnl of American Society for Information Science*, 30, 4, July, 215-223.

(17) BACSIGH P. D., The Open University Viewdata System (Optel Rept. no. 9). OU, Faculty of Technology, May 1981.

4.2. *User needs and 'information' - what are they, and what forms do they take?*

4.2.1. Questionnaire surveys and 'paper studies' have been markedly replaced by action researches and qualitative assessment, as emerged at a recent seminar at the O.U. on developments in education information research. These perspectives are well presented in 'Social Science Information Studies' (vol. 1, no 4, July 1981) which is mostly devoted to papers edited by Hounsell and Winn, from a 1979 symposium.

T.D. Wilson's paper in 'Journal of Documentation' on user studies is also highly instructive (18). The study 'Educational Information and the Teacher' by Hounsell and others (19) seems the most significant so far completed, suggesting that not only are teachers most conscious and appreciative of the 'right' information, but that a national information system for teachers could usefully be developed. The Travelling Workshop initiative was also used in the BL's Travelling Workshops Experiment oriented to user education in higher education. Ian Malley of the BL Information Project for User Education seems to suggest that such projects in higher education are so far disappointing, perhaps through users lack of time to involve themselves therin (20).

4.2.2. *Resources for use*. Two UK systems should be highlighted — last but not least. Based at the Centre for Educational Sociology, University of Edinburgh, the Scottish Education Data Archive and Collaborative Research Programme is primarily a collection of data from the continuing Scottish School Leaver Survey and incorporates a real achievement in networking for the information of teachers, administrators and full time researchers. A limited but practical computer retrieval system for central and local government administrators (SEDIR) is stored at the S.E.D. Secondly the Schools Council Curriculum and Resource Information Service began operation and was responsible for over 700 exchanges of information in its first few months and was planning for a computerization of its activities. One may hope that something of the educational case study, model programs and resource information exchange expected may yet be done under the aegis of the Curriculum and Examination Units with which it is now proposed to replace the Schools Council. The National Diffusion Network of the U.S. Dept of Education is to be mentioned as at least meriting very careful study as the leading example of economical locally based and effective exchange of information on educational innovations of demonstration quality, incorporating the relevant consultancy, evaluative and training features. It is thus the essential ' alter ego ' complement to ERIC in the program and resource elements of ERIC's document base. To conclude I return to the abundant British action and case study archive research on development and use of information skills in schools. A further report by Hounsell and Martin (21) and current researches under Stenhouse and Labbett, Brake, and also Tabberer of the NFER seem especially noteworthy (22). Teachers in schools have a vital role-involvement in teaching information skills, as an integral part of the curriculum, encouraging pupils to self-directed learning. This surely has great benefits and implications for all levels of teacher training and development.

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(18) WILSON T. D. (1981), On user studies and information needs, *Journal of Documentation*, 37, no. 1, March, 3-15.

(19) HOUNSELL D., MARTIN M., NEEDHAM G. and JONES H. (1980), Educational information and the teacher. BLRD Report 5505. University of Lancaster Centre for Educational Research and Development. Dept. of Continuing and Post Compulsory Education. This was reviewed by V. A. WINN, in *Education Libraries Bulletin*, 23, 3, (whale no. 69), Autumn 1980, pp. 44-47.

(20) MALLEY I. (1981), Aspects of user education in U.K. academic libraries 1976-81, *Education Libraries Bulletin*, 24, 3, whole no. 72, 1-15.

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(21) HOUNSELL D. and MARTIN E., Developing Information Skills in Secondary Schools: A Dissemination Project. Final Report to BLRD on Projet SI/G/334 1981. It is about to appear in BLRD's published report series.

(22) BRAKE T. (1980), Educating for access into the information culture, *Education Libraries Bulletin*, 23, 2, whole 68, Summer, 1-14.

Charles Hoover - Ted Brandhorst

Development and current status of the Educational Resources Information Center A model Bibliographic Control System covering the Literature of Education in the United States

NATIONAL INSTITUTE OF EDUCATION
Educational Resources Information Center (ERIC)

Introduction

The Educational Resources Information Center, or ERIC as it has come to be known, is the de facto U.S. national system for the bibliographic control of the document and journal article (i.e. non-book) literature of education.

ERIC is sponsored by the National Institute of Education (NIE), within the U.S. Department of education, and is operated by a variety of contractors from both the non-profit and for-profit sectors.

This paper will attempt to describe briefly the history of ERIC, i.e. its background, origins, and early developmental history, and then, at somewhat greater length, to describe the ERIC system as it is today. The management and the technical operations perspectives will be given approximately equal emphasis. ERIC's current products and services will be described, as well as some current plans and projected new activities.

ERIC has been in existence since the mid-1960's, a period of over fifteen years. During this time it has acquired considerable hard-earned experience, most of the benefits of which can be found recorded in its documentation, forms, procedures, products, and institutional memory. Because of this, and because of the ease of obtaining ERIC's products and documentation, it has sometimes been the focus of attention of those planning new systems of bibliographic control, in both education and non-education disciplines. That is why we sometimes describe ERIC as a « model » system, because aspects of it have been imitated and because we actively encourage that kind of information transfer.

BACKGROUNDS/ORIGINS

A. *Legislative mandate/Historical Beginnings*

The United States does not have a single, unified, articulated national information policy. There have been many debates as to whether one is needed and/or advisable and what it might be, but at the present time each agency or group looks within its own enabling legislation or to the interests of its own group members to determine its information programs and policies. This has led, admittedly, to some confusion and to some confrontations between sectors, but at the same time it has also led to a pluralistic richness of approaches and a freedom to simultaneaously pursue many different solutions.

Government interest in information as a significant resource can be traced perhaps most easily to the events of World War II which resulted in a flood of domestic and foreign technical report literature which the conventional libraries were not sure what to do with. Many of the organizations with us today as technical report processing centers, such as the National Technical Information Service (NTIS) and the Defense Technical Information Center (DTIC), had their roots in organizations formed either during the war or in the postwar period to achieve bibliographic control over this new and « fugitive » literature.

ERIC cannot lay claim to going back quite that far, but the Government never forgot the significance of the report literature and when, in the early 1960s, it found itself faced with a chaotic situation in the form of a proliferation of unpublished reports emanating from increased Federal funding of research, exemplary programs, and demonstration projects by the Department of Health, Education, and Welfare, the environment was ripe for a system like ERIC.

B. *Early Developmental History*

The first grouping for a solution can be found in conceptualization and feasibility studies dating back to 1960. In 1961, perhaps realizing that an information system cannot spring into existence full-blown without some advance work being done, we find the first efforts being funded to conceptualize an ERIC *Thesaurus*. Many of these studies did not bear immediate tangible fruit, but it was apparently necessary to go through the process and examine the alternatives before decisive implementation could take place. However, by 1964 the long gestation period was finally over and ERIC can be said to have been « founded », in the form of an obscure organizational unit within the then Office of Education.

The problem ERIC was asked to solve can be exemplified most simply by the following illustration: a study or research effort was commissioned; the final report (perhaps the only result) was sent to the Project Monitor in 10-25 copies; if approved, a limited distribution was effected; a copy of the report sat on the monitor's shelf for a while; eventually the monitor was re-assigned or left; a year or so after the project was closed, virtually no one could find a copy of the report. Over time, it became, to all intents and purpose, as if the project had never existed. As a result, Government began periodically to « re-invent the wheel ». Clearly something had to be done. What was needed was a « system » for acquiring, selecting, processing, announcing, disseminating, and archiving the growing body of knowledge represented by these reports and other documents.

For a brief period, from April 1964 to March 1966, ERIC functioned as a traditional, centralized Federal information center. It was during this period that the first contract was let to place documents on microfiche. This contract became the beginnings of the ERIC Document Reproduction Service (EDRS). During this period, however, as the newly-formed ERIC unit planned its future, it rapidly decided to structure itself in the future on a decentralized model. It was felt that education in the United States was very much a decentralized enterprise, with power dispersed to the states and localities, professional associations, and teacher unions. Information was being developed at all these levels and a monolithic information center in Washington was not felt to be the best way to try to keep abreast of such a diffuse and dispersed community. With surprising rapidity a system of separate « Clearinghouses » was conceptualized, each concentrating on a major section of the field of education and each bearing responsibility for acquiring the documentation of that field and for interacting with that particular part of the educational community.

During 1967, contracts were let for twelve ERIC Clearinghouses and for a central editorial and computer facility. The Panel on Educational Terminology (PET) was established to guide development of the fledgling ERIC *Thesaurus*. In November 1966, the first small issue of ERIC's abstract journal appeared, then called *Research in Education* (RIE). In 1967, an additional six Clearinghhouses were establshed, for a total of 18. Since then the number has fluctuated up and down in response to needs and priorities. There have been a total of 23 different Clearinghouses, but the number has currently stabilized at 16. Also in 1967, the word « Research » in ERIC's name was changed to « Resources », reflecting the early recognition that research results were not the only bibliographic resources that ERIC was going to collect.

Initially, ERIC concentrated on the report literature generated by the funding of its parent agency. The first documents were virtually all of this type and they dictated the nature of the early database and the content of the ERIC *Thesaurus*, which was being developed from the initial raw indexing efforts. In fact, one of ERIC's first major compilations was an effort to bring the then known « backlog » of documents under control. This effort resulted in the document entitled *Office of Education Research Reports, 1956-1965.*

Information systems have a natural appetite for their raw materials, however, and while ERIC's has been modest over the years, it didn't take it long to attempt to fill the need for an abstract journal dealing with the journal article literature. In 1969, the first issue of *Current Index to Journals in Education* (CIJE) appeared. Since that initial rapid expansion, however, ERIC has looked only speculatively at the various other kinds of educational resources that might conceivably come under its wing and become new files. It was easy to bypass the commercial hardbound book output of the traditional commercial publishers, so well handled by the conventional library system, but many other possibilities exist and have been foregone due to a combination of the shortage of funding and lack of a clear mandate for ERIC to increase its coverage.

But this is enough history, and probably more than a paper of this type can afford. I would like to present to you next ERIC as it is today from the perspective of the Government manager that sets the policies and lets the contracts for the specific operational components.

ERIC AS IT IS TODAY

A. *Management Perspective*

1. *Mission, Objectives, and Functions*

ERIC's *mission* is to bring the English-language literature of education to the attention of the educational community and to make it as easily accessible by this community as possible, so that improvements in the educational process can be facilitated. For this purpose, the educational community is broadly defined to include: researchers, teachers, administrators, policy makers, librarians, counselors, students, and those members of the general public pursuing an educational interest.

To accomplish this broad mission, ERIC has established a number of specific objectives which are in turn achieved by a set of actual operational functions.

ERIC's *objectives* are:

Bibliographic Control. ERIC will establish procedures for the achievement of bibliographic control over English-language documents and journal articles dealing with education in all its aspects. Documents include research reports, project descriptions, evaluations, bibliographies, curriculum guides, speeches, dissertations, conference proceedings and papers, and many other types of material produced for all educational levels. Journal articles include not only those appearing in journals devoted to education, but also those dealing with education that appear in non-education journals. Currently over 700 journals are covered by ERIC.

Announcement to the Educational Community. The material placed under bibliographic control by ERIC will be announced to the user community on a timely basis and will be indexed for easy access. ERIC will not simply collect without announcement.

Availability of Documents in Full Text. The material announced to the user community will be obtainable in full text. ERIC will not simply announce material for which no availability can be determined.

Permanent Archive. Material announced by ERIC will be available indefinitely, since even information that eventually becomes obsolete can have value as an historical record and to prevent replication.

Computerized Retrievability. The ERIC database will be accessible to the users by computerized techniques as well as by manual techniques. The ERIC database is very large and manual searches can be onerous and time-consuming. For this reason, computerized access and the sophisticated searching techniques that can be applied in that mode, must be available. At the same time, since not all users have access to computers or computer terminals, manual access must continue to be provided.

Information Analysis, Synthesis, and Reduction. Within its limited resources, ERIC will attempt to aid the users in coping with the large volume of information by performing and publishing analsyses that, in effect reduce many documents to one « Information Analysis Product » by summarizing the content of the many documents.

Reference and User Services. ERIC will guide the user in the use of ERIC database and its related products and, in those instances where ERIC cannot itself provide the information required or perform the service required, will refer the user to an appropriate source.

Service to All Levels of User. ERIC will attempt to serve *all* levels of user including the researcher in the laboratory, the administrator in office, and the teacher in the classroom.

Low Cost. ERIC will attempt to achieve its objectives at the lowest cost to the Government. It will also attempt to provide its products and services at the lowest possible cost to the user comensurate with a quality product. This objective will require a judiciuos use of Government, non-profit, and for-profit components.

Wide Dissemination. ERIC will attempt to disseminate its information as widely as possible, for the benefit of as many users as possible.

Leadership in Technology and Standards. ERIC will strive for leadership in using the latest technology and advances in information science. ERIC will provide training and technical assistance as a part of leadership.

Some of the *functions* that ERIC performs to achieve these objectives are:

Acquisition of Documentary Material. ERIC components have established a nationwide network of contacts and arrangements with sources of documents in order to obtain copies of all significant educational documents issued in the U.S. Selected non-U.S. sources are also solicited.

Selection and Screening (to Achieve Quality Control). Detailed guidelines have been developed concerning both the types of documents desired for the ERIC system and the appropriate content of those documents. Uniform criteria are used throughout the system. At the present time, ERIC selects one document from every three acquired.

Cataloging, Indexing, Abstracting (Technical Processing). Documents selected by ERIC are subjected to a detailed processing that attemps to describe each document uniquely and to summarize its subject content via index terms and an informative abstract.

Lexicography. The ERIC *Thesaurus* and its use in indexing provide controlled vocabulary access to the ERIC database, to complement the free text access provided by modern retrieval systems. It is important that the ERIC *Thesaurus* remain up-to-date with respect to current terminology.

Database generation and Maintenance. The surrogate records created by ERIC must be incorporated in a computerized database in order to achieve the various objectives of timely announcement, sophisticated retrieval, and wide dissemination. This involves data entry, editorial, and computer processing functions.

Abstract Journal Production. To achieve its announcement objectives, ERIC currently publishes two monthly abstract journals: *Resources in Education* (RIE) and *Current Index to Journals in Education* (CIJE).

Information Analysis Product (IAP) *Publication*. The ERIC Clearinghouses all have programs designed to produce a certain number of information syntheses during the course of the year. These are widely distributed, highlighted in RIE, announced in an annual bibliography, and made abailable in a special microfiche product. The Clearinghouses are ideal foci for this function because they are in close touch with the major movements, trends, and sources of expertise in their respective subject areas.

Document Delivery. In order to ensure that ERIC documents are both available and available at low cost, ERIC arranges for its documents to be microfiched (using the low cost vesicular process). The microfiche collection may be subscribed to (there are currently over 700 subscribers) or documents may be ordered individually in microfiche or paper copy reproductions from the microfiche. The entire document delivery function is provided by private industry at no cost to the Government. The contractor with the lowest price to the public wins the right to provide the service (and to make what profit they can).

Professional Meeting Participation. To achieve wide public awareness of ERIC and its products, the ERIC staff participate extensively in professional meetings and distribute ERIC informational literature at these meetings.

Reference and User Services. Clearinghouses maintain modest programs of user services that permit personal contact with users and the answering of individual questions. Computer searches of the ERIC database are frequently made on a cost recovery basis. For extensive services beyond the capacity of the Clearinghouse, users may be referred to geographically close sources of service (as listed in the various ERIC directories). Where appropriate, users may be referred to the vendors providing sophisticated online retrieval services for the ERIC database (and hundreds of other databases). The major vendors of this type are DIALOG Information Services, System Development Corporation (SDC), and Bibliographic Retrieval Services (BRS). In other cases, users may be interested in purchasing the ERIC files directly and searching them on their own computers. ERIC sells its files on magnetic tape to interested users at an economical price calculated to promote such usage.

Training. The ERIC Clearinghouses regularly hold training sessions for librarians, information specialists, reference personnel, and other ERIC users. Such training emphasizes the ERIC system, how to use it, and the various tools which provide access to it.

Technical Assistance. ERIC offers to provide technical assistance to organizations, such as State education agencies, interested in developing files compatible with ERIC. This effort contributes to the likelihood that state files will in the future be able to « talk » with one another and with ERIC. The occasion is also used to arrange for better contribution of state documents to the ERIC acquisition process.

2. *Structure*

ERIC is a decentralized system comprising some twenty organizations and extending across the Government, non-profit (universities and professional organizations), and for-profit sectors.

At the top is the Federal component referred to familiarly as

« Central ERIC ». This is the policymaking, funding, monitoring, and administrative/management unit.

In the middle are the sixteen (16) ERIC Clearinghouses, each located at non-profit institution already having a considerable interest in and expertise with a particular part of the large field of education. The Clearinghouses are each multi-discipline in nature, but can be characterized as being one of three types:

Level-Oriented. e.g. Higher Education, Junior Colleges, Elementary and Early Childhood Education.

Discipline-Oriented. e.g. Social Studies, Science and Mathematics, Reading and Communication Skill, Information Resources.

Problem-Ariented. e.g. Urban Education, Handicapped and Gifted.

The private or for-profit sector is represented by three contractors that provide support services in high technology or commercial areas (computer systems, micrographics, and publishing).

Also involved are the U.S. Government Printing Office (GPO), which functions as the printer and subscription agent for RIE, and the vendor organizations which provide online retrieval services against the database.

3. *Funding*

ERIC operates on the basis of an approximately $ 5 million budget allocated to it by the National Institute of Education (NIE). The majority of these funds go to the ERIC Clearinghouses in support of the function of building the computerized database. Funds also go to the central editorial and computer facility for the same purpose. ERIC has been budgeted at approximately the same level for the past 6 years which, with inflation, has resulted in a steadily declining buying power.

The micrographics contractor, the commercial publisher, and the online vendors are example of an important ERIC policy at work. They are providers of services to the end user and they are no-cost--to-the-Government arrangements. ERIC, in effect, gives these organizations a license to, in the first case, microfilm ERIC documents, in the second case, publish the ERIC *Thesaurus* and *Current Index to Journal in Education*, and in the third case, to include the ERIC database in retrieval systems. The organizations proceed to provide services and to market products to the public, recovering their costs and making a profit in the process, but not charging the Government a penny. The users, in turn, pay for what they specifically get, but pay no subsidy in tax dollars. A little control is lost in the process, but basically the user gets what is wanted, the contractor makes a profit, and the Government, while paying for database generation, avoids subsidizing the millions of usages.

This principal, which can be called « leveraging » is, along with decentralization, one of the major « signatures » of the ERIC system. It is evident, to some extent, even in the Clearinghouse contracts, where the host organization holding the Clearinghouse contract typically provides some services (e.g., donated personnel, printing of the some products, equipment, etc.) above and beyond those strictly paid for by the contract.

4. *Governmental Environment*

Originally ERIC was formed as a unit within the Office of Education (OE). In 1974, when the research programs of OE were transferred to the new National Institute of Education (NIE), ERIC was included as part of the package transferred. Initially NIE fell within the Department of Health, Education, and Welfare (DHEW). In May 1980, when the new Department of Education was formed, NIE was transferred to it.

With the advent of a new administration in Washington, there has been serious talk of abolishing the Department of Education and returning most of its functions to the states. This has not happened yet, but may be a possibility for 1983. Under such a circumstance, it is difficult to say exactly what will happen to NIE and to ERIC. The ERIC managers would like to think that the ERIC system has, over the years, developed a positive reputation in the educational community and that its large constituency is known by policy setters at the upper levels. Furthermore, studies indicate that the secondary use of ERIC and its products by information searchers is so large that approximately $ 24 of non-government money is spent on ERIC for every one dollar that the government spends building the database. Such a « seeding » approach, together with ERIC's already--described policy of utilizing the private sector, is well in line with current administration policies and practices.

For these reasons, we are optimistic about ERIC's chances for survival despite the current budget reduction pressures. We are not sure what may occur organizationally, but we believe that ERIC's legitimate role in building a fundamental bibliographic database for education is recognized and will continue to be funded.

B. *Operations Perspective*

From an operations perspective, the central fact of life about ERIC is that it exists at no one place, but rather in the form of a network of decentralized but interlocking organizations, each with specific responsabilities and each performing specific functions. Such an organizational structure permits ERIC to better embed itself in the educational community, but it presents very real operational problems, particularly in the area of coordination of efforts, that must be solved by a variety of tools, procedures, and management controls.

I would like first to review for you the components of the ERIC system, the functions that go on at each component, and how the components interact with one another.

1. *System Components*

The System Components are:

— Central ERIC (within the National Institute of Education;
— 16 ERIC Clearinghouses (within non-profit contractors);
— ERIC Processing and Reference Facility;
— ERIC Document Reproduction Service;
— CIJE Publisher.

In a supporting role, without actually being part of the formal network, are the U.S. Government Printing Office (GPO) and the major vendors of online retrieval services for bibliographic files: DIALOG, SDC, and BRS.

Let us look at each of these components in turn.

2. *Role of Each Component and Workflow Between Components*

a. *Central* ERIC

Central ERIC is comprised of a group of less than ten staff members of the National Institute of Education (NIE). Central ERIC has an annual budget of approximately $ 5 million from which all operating components must be funded. The Central ERIC staff develops the statements of work, competes the contracts, selects the contractors, funds the operations of the contractors, and monitors their performance via required reports, site visits, and periodic reviews. All basic policies and directions are established by Central ERIC, functioning as the system planner. In a sense, the various contractors merely carry out the directions of Central ERIC, though in practice there is adequate scope within each contract to exercise considerable initiative and creativity.

To assist Central ERIC in the performance of its management and planning function, there exists a Council of ERIC Directors (COED) that meets twice a year to resolve management level issues, and there is a New Technology Committee whose task is to investigate new technologies and to report on their possible use by ERIC.

To assist Central ERIC in the resolution of technical and operational problems there is a Technical Steering Committee, whose job is to make recommendations to improve internal system functioning at the procedural level, and there is an annual Technical Meeting at which representatives of all system components meet to discuss and resolve common problems and issues, to share useful information, and to discuss needed systems improvements. The National Meeting frequently develops issues for the Steering Committee to later analyze and report on.

The Central ERIC monitors are constantly in touch with system components for the purpose of monitoring the work efforts and ensuring contract compliance.

In addition, because Central ERIC is resident within the Department od education, the majority of documents from that organization enter ERIC via Central ERIC.

b. ERIC *Clearinghouses*

The principal function of the ERIC Clearinghouses is to capture the literature within their respective areas of subject responsability. Once captured, the literature is subjected to selection criteria. The documents found to meet the criteria (1 in 3) are « processed », meaning reproduction releases are obtained and they are cataloged, indexed, and abstracted. The results of this processing are forwarded, with the document itself, to the ERIC Facility. If the Clearinghouse has any recommendations for new index terms required to index the literature being transmitted, these are also sent to the Facility. At this point, the responsibility of the Clearinghouses for the database and for the abstract journal publications ceases and shifts to the ERIC Facility.

The other functions of the Clearinghouses pertain to output and use of the database for the benefit of users. The Clearinghouses respond to user inquires and either answer the questions directly or refer the user to appropriate sources. In addition, each Clearinghouse has a publications program in which they attempt to generate information analysis products that synthesize the literature, reducing the content to many publications to one summary or state-of-the-art publication. Approximately 200 publications per year of this type are generated by the Clearinghouses and are made widely available to users. As the organizations acquiring, selecting, and analyzing the literature, the Clearinghouses function as « gatekeepers », and are in an almost unique position, as the literature passes through their hands, to be aware of its moving edge of trends and interests and to act on that awareness at an early point.

As a further effort to bring ERIC and its bibliographyc resources to the working level educator, ERIC Clearinghouse staff participate widely in professional meetings. The annual ERIC *Conference Calendar* lists over 200 meetings at which the Clearinghouses participate in various degrees.

Frequently the subjects areas in which the Clearinghouses operate are represented by professional journals that will give the Clearinghouses a column, in effect, in which they can announce and describe various developments in the literature that will be of interest to readers of that journal.

All of these approaches, and more, are needed in order to reach the vast educational community in the U.S. ERIC spends most of its modest budget building the fundamental database on which its system rests. The remainder is devoted to as many outreach activities as it can practically fund. These are necessarily limited and ERIC's chronic problem has always been how to create an awareness of its information resources in the minds of the hundreds of thousands of educational practitioners.

c. ERIC *Processing and Reference Facility*

The ERIC Facility is a central editorial and computer processing facility serving Central ERIC and the Clearinghouses. Its functions can be listed as follows:

Acquisitions

Even though each Clearinghouse basically performs its own acquisitions function, the Facility performs a centralized acquisition function covering Federal (and some state and international) documents. The objective here is to avoid an excessive number of letters coming into any given Federal agency from the 16 Clearinghouses. Should this occur, the impression would be that one part of ERIC does not know what the other part is doing. With the facility handling all Federal acquisitions, this coordination is achieved. While the differing subject responsabilities of the Clearinghouses go a long way to prevent duplicative acquisitions efforts, documents do frequently overlap the subject areas of Clearinghouses. As an aid in preventing duplication, the facility produces two tools for distribution to the Clearinghouses:

1) ERIC *Acquisitions Arrangements*, a cumulative list, by organisation name, of all formal acquisitions arrangements in effect by any system component. By reference to this list, a Clearinghouse can determine whether any given organization has previously been contacted, whether its documents are entering the system (and if so by which Clearinghouse), and what kind of reproduction release may have been granted.

2) *Acquisiton Data Report* (ADR). At the end of each month, each Clearinghouse reports to the Facility the titles of all documents acquired that month. The Facility merges the 16 reports, analyses duplication, and feeds back both a composite and a customized report to each Clearinghouse. Since the report is in the form of a six-month running cumulation, it is, in effect, a list of all titles in process throughout the system.

The Facility acquires annually approximately 6,000 of the 15,000 documents that are announced in RIE. The remaining 9,000 are acquired by the Clearinghouses.

Editorial

The ERIC *Processing Manual* specifies all procedures for processing the documents going into the ERIC database. Even so, with 16 dispersed Clearinghouses, each with its own staff turnover and training problems, there is invevitably some variability in the implementation of the guidelines. To offset this variability between Clearinghouses, the ERIC Facility subjects all incoming records to a standard editorial review process. The objectives of this review are to:

— Correct all typographical, spelling, and grammatical errors.
— Ensure the presence of all mandatory data fields.
— Validate index terms and institutional names against the authority lists established for these entries.
— Check the correctness of the cataloging (i.e. are all data elements cataloged that should be?) and the correctness of the data format (e.g. has the publication date been formatted properly?).
— Remove all duplicates or otherwise unsuitable documents.

Some of the above checks are done by computer, but others can only be done by human editors comparing the processing with the original document.

When the editors are satisfied with their work, they give the go-ahead for the final computer processing that produces the monthly abstract journal and adds that month's records to the ERIC Master File.

Document Control

The Facility is a central switching center for documents going to the Clearinghouses from central acquisitions and for documents coming from the Clearinghouses for the database. In addition, the Facility stocks all forms and labels common to all components (e.g. data input forms, thesaurus input terms, reproduction releases, disclaimer labels, etc.) and provides these to the Clearinghouses on demand. The Facility prints and stocks a wide variety of brochures, directories, and byproducts of the database, all of which are essential in order to manually use the database and to respond to user inquiries, e.g.:

— *Pocket Guide to* ERIC
— *How to Start an* ERIC *Collection*

— *Submitting Documents to* ERIC
— *Directory of* ERIC *Microfiche Collections*
— *Directory of* ERIC *Search Services*
— *Title Index*
— *Report Number Index*
— *Contract/Grant Number Index*, etc.

The Facility performs the complimentary distribution of *Resources in Education* (RIE) and *Current Index to Journals in Education* (CIJE). The Facility assigns final accession numbers to all documents, matches them with their final computer record, and forwards them to the ERIC Document Reproduction Service (EDRS) for microfiching. These and many more such activities are subsumed under the general rubric « document control ».

Lexicography

New concepts are constantly being generated in the literature and therefore must be provided for in the form of new Descriptors added to the indexing vocabulary, the ERIC *Thesaurus*. New specific entities are constantly being written about and therefore must be provided for in the form of new Identifiers added to the supplementary indexing vocabulary, the *Identifier Authority List* (IAL).

The individual indexers at the Clearinghouses, faced with the problem of indexing something new, make the original suggestions for new indexing terminology. It is the facility lexicographer, however, that analyzes the term, accepts or rejects the recommandation, develops a definition, assigns a group code, and weaves a pattern of cross-references around the new term.

Data Entry

All bibliographic data created by the Clearinghouses must eventually be put in machine-readable form. Originally the facility performed data entry for all records. In order to avoid double-keying, ERIC moved rapidly to accomplishing data entry at the point of original keying, the Clearinghouses. At the present time, this is achieved in a wide variety of ways, depending on the hardware available at the particular Clearinghouse:

— Keying on Selectric typewriters using an OCR font that can be scanned by a machine at the Facility and transferred to magnetic tape.

- Keying on word processors equipped with a communications option and sent to the Facility electronically.
- Keying on mini- or microcomputers and sent to the Facility electronically.
- Keyed for in-house computer systems and sent to the Facility in the form of a computer-compatible magnetic tape.

In each of these cases, while the Facility is not actually doing the keying, it is doing scanning and other functions relating to the differing forms of data entry. Eventually, the ERIC Clearinghouses will be sufficiently well-equipped with hardware that one uniform method of data entry will be employed. At the present time, however, ERIC cannot afford to put the same kind of hardware in each Clearinghouse and therefore the ERIC Facility must accomodate itself to whatever the host organization of the Clearinghouse can provide.

Computer processing

The ERIC computer system is primarily involved in building and maintaining the database and its associated authority files and in providing publications from the database. it is not concerned with online retrieval insofar as that function is performed at a sophisticated level by the major online vendors.

The software can be subdivided into four maion sections: 1) Resume file duilding, 2) Thesaurus file building, 3) Source Authority List file building, and 4) Preparation for photocomposition.

The ERIC software is written primarily in IBM 360/370 Assembly Language for operation on IBM computers or those that can mimic IBM computers. Certain new programs added over the years have been written in the PL/1 language.

The ERIC software was originally created in 1969. It is the responsability of the ERIC Facility to operare that software, to maintain it, to improve it, and to add to it, when necessary.

Reference and User Services

Inquiries about ERIC and about the contents of its database come into the Government at various locations:

- Department of Education
- National Institute of Education

— Central ERIC
— Government Printing Office
— Library of Congress, etc.

Most of these are routed to the ERIC Facility for reply. In addition, some are received directly by the Facility. In a normal year, the Facility will process 8,000 to 12,000 such letters. At the present time, because of the generally reduced economic activity, there has been a falling off in the volume of inquiries.

In addition to the letters handled by the Facility, the Clearinghouses annually process a combined total of approximately 50,000 letter and telephone inquiries.

The majority of inquiries concern specific documents that the user whishes to obtain. The Facility identifies the document in the ERIC collection, if at all possible, and provides the user with information about its availability and price. The Facility does not do computer searches for the public, but rather refers such requests to alternative sources, based on its *Directory of* ERIC *Search Services.*

In addition to handling inquiries, the reference function gets involved in the preparation of brochures and reference works that can be used to respond to inquiries.

d. ERIC *Document Reproduction Service* (EDRS)

One of ERIC's strongest features as an information system is that it insists on closing the loop and providing document delivery. It does not merely announce an item and then throw the user on his/her own resources for obtaining a copy. Instead it goes to the trouble of obtaining reproduction releases for 97% of the documents it announces, it places these documents on microfiche, it sells the microfiche on subscription, and it sells on demand microfiche copies and paper copy blowbacks.

The micrographics arm of ERIC is the ERIC Document Reproduction Sercice (EDRS). The EDRS contract is awarded to the private sector on the basis of lowest cost to the public. At the present time there are over 700 ongoing subscriptions to the ERIC microfiche collection. In the course of a year EDRS distributes well over 10 million microfiche all over the world in connection with these subscriptions. Annual on demand orders amount to around 50,000 for microfiche and 50,000 for paper copy.

In order to microfilm the documents it receives from the Facility, it is necessary for EDRS to take them apart. The original documents are then retained for a four-month holding period, in the event that some error should be discovered and re-filming should prove necessary. After this time the documents are destroyed and the master silver microfilm role becomes the archival form.

The EDRS function takes place at the end of the processing cycle, after both the Clearinghouses and the facility have done their work. For this reason, there is little interaction from EDRS to the other system components. Occasionally original documents must be returned to their owner. Occasionally documents must be re-filmed to rectify a problem. On the whole, however, EDRS interacts primarily with the users wishing to obtain the full text of the documents announced in RIE.

e. CIJE *Publisher*

At the same time the ERIC Clearinghouses are acquiring documents and processing them, they are also subscribing to all significant education-related English-language journals and serials and processing the articles found in those publications. The processing for journal articles is slightly different than that for documents in that the number of data elements captured is smaller, a 50-word annotation is written in lieu of an abstract, and no reproduction release need be obtained because ERIC does not a attempt to film the journal (which are usually copyrighted).

Apart from these differences, the Clearinghouse processing is much the same as for RIE. The Clearinghouses send the resultant data to the Facility. The Facility, however, instead of preparing the data for publication at GPO, sends it instead to a commercial press that undertakes the cost of printing and publishing CIJE for whatever it can make on subscriptions. The arrangement with the press is at no cost to the Government.

The CIJE publisher maintains the master list of journals indexed for CIJE. As the Clearinghouses decide to add or to delete journals, they contact the CIJE publisher so that the master list can be updated.

The document delivery problem with CIJE is left to the commercial journal article reprint services, of which University Microfilms International (UMI) is the principal example. UMI has been in this business for years and has managed to persuade approximately 70% of the journal publishers to agree to a royalty arrangement. UMI reproduces and sells journal articles on demand to the pubblic for $ 8 each. The profit on each sale is divided between UMI and the original publisher. Again, no ERIC money is involved in these transactions.

After the CIJE publisher has completed each issue of CIJE, a magnetic tape containing the bibliographic data is sent to the ERIC Facility for integration into the Master ERIC database.

The lexicographic function is handled in two ways. The Facility continues to receive and process all suggestions for new terms, whether generated for RIE or CIJE. The Facility continues to review all new Identifiers for both publications; it does this as the data passes through its hands from the Clearinghouses on the way to the CIJE publisher. The Facility provides the CIJE publisher with a monthly updated Thesaurus tape for use in validating all index terms used in a given issue.

f. U.S. *Government Printing Office* (GPO)

Once a month the ERIC Facility prepares a magnetic tape containing data for an issue of RIE, to be run on the GPO photocomposition device. This device is currently a Videocomp and therefore the tape must contain all the necessary codes to tell the Videocomp how to compose the data, e.g. what is bold, what is italics, what is the leading between lines, how many colums, how the running heads structured, etc. In order to ensure that the content of the tape is accurate, a computer printout proof listing in the form of the publication itself is prepared from the tape and accompanies it to GPO.

GPO photocomposes the journal issue, prints it in approximately 5,000 copies, satisfies the subscriptions, sends a certain stock to the ERIC Facility, and puts the rest up for sale on an on-demand basis. GPO weeds its stock mercilessly and RIE's more than two years old are generally out-of-print at GPO. For this reason, the CIJE publisher prepares annual cumulations of both CIJE and RIE which are kept in print commercially indefinitely.

g. *Online Retrieval Vendors*

The major vendors in the U.S. of sophisticated online retrieval services for bibliographic files are DIALOG Information Services, System Development Corporation (SDC), and Bibliographic Retrieval Services (BRS). In each case, the services provided are based on different software and therefore the command structure and details vary, nevertheless the capabilities are roughly the same.

Each online vendor subscribes to the ERIC databse and receives regular monthly tapes containing data for the most recent issue of RIE. Each month they update their search files.

For the provision of such retrieval services, ERIC relies entirely on the online vendors. The pressures of competition among them ensure a steady stream of improvements and if one vendor's system goes down the others are ready and waiting to pick up the business. The public pays only for what it uses and, again, ERIC achieves an important objective at no cost to itself.

3. *Controls for System Coordination*

As mentioned earlier, the decentralized nature of the ERIC system, the fact that it is not all together in one place, necessitates various procedures and products directed at coordinating the efforts of the geographically separated components of the system. Some of these are described below:

ERIC *Telephone Directory*

Lists full addresses, telephone numbers, time zone, NIE monitor, staff names and titles. Indexes all staff by name and specialty.

ERIC *Master Schedule* (Annual)

Schedules each weekly shipment of data and documents to the Facility and the Facility functions to be performed on a given issue. The Clearinghouses can tell in advance what shipments will go in what issue and when the deadline dates are. Done in two versions, one for RIE and one for CIJE.

ERIC *Facility Contract Deliverable Item Schedule*

An annual schedule detailing projected dates for all ERIC Facility products.

ERIC *Conference Calendar*

Lists all projected conference/meeting participation by the

Clearinghouses for the year ahead. Arranged chronologically and by conference name. Avoids duplicate attendance.

ERIC *Acquisitions Arrangements*

Lists all formal acquisitions arrangements consumated by the Facility of the Clearinghouses. Arranged by organization. Displays contact person name, date of arrangement, level of reproduction release. Prevents duplicate contacts.

ERIC *Processing Manual* (EPM)

The « Bible » of the system, containing detailed procedures for the Clearinghouses to follow in performing the Acquisition, Selection, Document Handling, Cataloging, Indexing, Abstracting, Data Entry, and Lexicographic functions.

Source Journal Index

List all of the journals covered by CIJE together with the name of the Clearinghouse having responsability for the journal.

Source Directory

Lists all of the organization names that have either prepared or sponsored documents that have been entered into the ERIC database. The names are in approved format so that all usages of the same organization will refer to it in a standardized way. Updated monthly.

In addition to these products, all forms that are used across the system are standardized, printed, and stocked by the Facility. This ensures that Clearinghouses will not vary in their wording on critical forms and labels, such as the Reproduction Release.

4. *Output Products and Services*

ERIC has four basic commodities: bibliographic data, original full-text documents, authority lists, and the results of its analysis and synthesis of the literature. ERIC's strategy is to package these four commodities in as many ways as it can in order to reach as many people as possible. The flagship products are, of course, the two abstract journals: *Resources in Education* (RIE) and *Current Index to Journals in Education* (CIJE). The total set of products and services can be classified under the followin headings:

Products From the Database

- *Abstract Journals*
  - Resources in Education (RIE)
  - Current Index to Journals in Education (CIJE)
- *Other reference Publications*
  - Title Index
  - Contract/Grant Number Index
  - Report Number Index
- *Computer-Output-Microform* (COM)
  - Cumulative Indexes (Subject, Author, Institution)
  - Descriptor and Identifier Usage Reports
  - Resume Cumulations
- *Magnetic Tapes*
- *Search Services*
  - Computer Searches (on demand, batch)
  - Online Retrieval
  - Selective Dissemination of Information (SDI)

Products From the Original Documents

- Document Delivery (Subscription and On-Demand)
  - Microfiche (Silver and Vesicular)
  - Paper Copy Reproductions

Products From the Authority Lists

- Thesaurus of ERIC Descriptors
- Identifier Authority List (IAL)
- Source Directory

Products and Services Based on Analysis/Synthesis of the Literature

- Information Analysis Publications
- Bibliographies
- Question-Answering Services
- Conference Participation
- Journal/Serial Columns

IV. *THE FUTURE OF ERIC*

As we have mentioned, there are currently various uncertainties and intangibles that cloud our crystal ball when we look at the future of ERIC. Changing fiscal policies in the Government and a re-prioritizing of Federal spending are most significant environmental factors with which we must contend. Nevertheless, we do not believe that the perceived need for Government-sponsored information dissemination services will disappear. The role and effectiveness of such activities, however, will clearly be closely scrutinized and some redundant systems may be merged with others, but the strong, well-managed, and genuinely needed systems will survive.

To demonstrate that it is among this group, ERIC intends (by user feedback projects and studies) to strengthen its understanding of the clients to be served and how best to organize and deliver products and services. Recent efforts in this direction have generated information about the usage of ERIC that is proving every day its utility in the budget deliberations.

For example: ERIC products and services are accessible through over 3,200 locations in the United States and perhaps as many as 300 locations abroad. These locations represent many different types of secondary service providers to which educators turn for educational information. The $ 5 million dollars allocated annually to ERIC brings under permanent bibliographic control the output of hundreds of millions of dollars of educational R & D efforts, both Federal and non-Federal. In response to that basic expenditure, the various ERIC access points spend approximately $ 25 million annually to support the distribution and use of ERIC information, or about 5 times as much as is contributed by the federal Government. This is an outstanding example of government's ability to spend a small but essential number of « seed » dollars that then stimulates much greater expenditures on the part of other sectors of the economy. ERIC functions as a « wholesaler », developing products and services within the concept of generalized dissemination assistance. The thousands of « retailers » then provide a multiplier effect. The end result is an economical system that solidly links knowledge to practice and that provides a great deal of freedom of choice for the information consumer.

Let us look at some specific and see what can be said about the future:

Funding Levels/Restoration of Recently Lost Budget Funding

A review of ERIC's budget history reveals that since 1972, if the budgests are adjusted for inflation, ERIC has suffered a 50% drop in buying power. In addition, for FY 1982 ERIC had to absorb a direct 15% cut in funding levels. As a result, ERIC was finally forced to order the first serious reductions in its history in the volume of material input to the database.

ERIC regards the database as its top priority program and is fighting hard to have funds restored that will return the database to former levels of information acquisition. We are optimistic that this will occur, probably by FY 1984.

Modernization and Quality Control of Basic Internal Processes

We foresee a modest expenditure of resources for internal technological or administrative improvements. Examples might be moves to online duplicate checking, online data entry, online editing, and electronic mail/conferencing among Clearinghouses.

Improving Awareness of ERIC *Among Users/Outreach Activities*

We plan to devote resources to increasing the level of awareness of and access to ERIC resources among users. ERIC needs to reach segments of the educational community not now aware of ERIC or how to use its resources. School librarians and schools of education will be specific targets of ERIC outreach activities. Particular attention will be paid to demonstrating how ERIC can be a resource to educators attempting to resolve real-life local educational problems.

Expansion of the Database/National Practice File

A FY 82 developmental effort of the ERIC program is the *National Educational Practice File*, designed to give teachers and administrators improved access to information on educational practices. The National Educational Practice File is intended to improve the availability and use of information about educational practice by teachers and school administrators through the development of an information file specifically targeted to their needs. Because teachers and school administrators will be the ultimate users of the file, they will be involved in specifying its content and format and developing specifications for the types of materials needed to support school improvement efforts. The intent is to develop a file that is as responsive as possible to users. Documents meeting those specifications will be placed in a special computerized file.

Technical Assistance

Over the past several years, State education Agencies have been calling on ERIC staff and contractors to provide technical assistance for their database development efforts. We anticipate further requests, especially as we work with other types of organizations to increase their disseminations abilities and resources. To be able to respond to such requests for help from these information providers, our Clearinghouse and Facility contractors will require some modest additional resources.

New Technology Harnessed for New Products

In the late 1970's, two different reviews found ERIC to be at the state-of-the-art in its use of information and communication technologies. By FY 1984 we will be half a decade away from those reviews - a period of exponential growth in such technologies. The ERIC system must invest some resources to pilot test the application of such rapidly advancing new technologies as microcomputers and videodisc technology in delivering ERIC resources to potential clients. Some work in this area occurred during the past year but was eliminated in FY 1982. If ERIC is to remain a leading information system, ERIC contractors will need to continue to be able to conduct at least some small scale special projects to explore the applications of new technologies to the ERIC system.

In summary, while ERIC's basic existence may not be threatened, its future in terms of modifications, improvements, or new products/services, is dependent on an increase in its funding. Present plans within the Department of Education are to give ERIC that funding. If this may be regarded as in ERIC's future, then the future looks brighter for ERIC than it has in many years.

Giovanni Biondi

The Educational Documentation System in Italy: first steps

BIBLIOTECA DI DOCUMENTAZIONE PEDAGOGICA

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Introduction

One of the elements that emerges most frequently from the overall picture of study and research in Italy in the field of education science and scholastic systems, is the problem of the proliferation of materials produced. This problem is felt both by the individual researcher as well as the groups of researchers and also involves the complex nature of the variables that come into play in reference to the large scholastic phenomena.

In Italy today we are facing a double difficulty in the field of bibliographic research. In the first place, due to the nature of the organization of our national library system, it is impossible to obtain complete and up-to-date information. Given the lack of coordination among Italian libraries, it is clear that the resultant difficulties have a serious effect on the research efforts of decentralized centres. In the second place, there is the problem, particularly evident in the national libraries, of the periodical update of the catalogues. This involves the availability of materials within the centralized systems which in the admittedly vast library panorama, seem to be the only means potentially capable of providing information services of the required completeness.

Research encounters various degrees of difficulty when one endeavours to extend it to every kind of documentation that is product of experience, experimentation, debate, study, investigation and conferences promoted by shools of various order and degree (universities, official bodies, Associations, Institutes of Research etc.). These all produce materials which, if published, have a very limited circulation. The difficulties are often insurmountable even for the most expert researcher and obviously even more so for the typical teacher and student, and even more so for the school itself which should be the prime recipient of all this documentation. In this case, physical distance from the source becomes a determining factor not only for access to the material but even as regards being aware of the existence of the material produced.

Scientific research often functions with only partial documentation. However it is the school that pays the price of the shortcomings and difficulties due to the impossibility of access to the documentation which would guarantee a real exchange of experiences among teachers and would avoid costly mistakes in which research projects are constantly being re-started from the beginning.

The difficulties increase when we pass from the level of the documentation which we can define as « bibliographic » to that of the analysis of the more important phenomena of our scholastic system. Decision in this field is tied to intuition, personal experience and reference points both partial and geographycally determined. In fact, in Italy today there are no information systems which allow critical, analytical and global evaluation of the results of practice and research. Nor is it possible to understand the substance and form of the process which is evolving today in Italy within the complex and contradictory model of education.

The need to organize a network of educational documentation in Italy is therefore a problem which appears with a certain insistence in the present debate. It has also been perceived, though not in all clarity, by the legislator who repeatedly used the term « documentation » in the decree establishing the IRRSAE, the CEDE and the BDP. The document approved unanimously by the Conference of Presidents of IRRSAE, BDP, CEDE in July, 1981 underlines the need to consider, in reference to the problem of documentation, the organizations that have sprung up through Decree 419 « as an integrated system which equally and in their own spheres, concur in common goals ».

In this framework, the Educational Documentation Library (BDP) whose specific responsability is documentation, provides services according to the needs of the entire system: « in cooperation with national and foreign cultural organizations and with the various government departments ».

As a result, in the last Conference it was agreed to set up a multipoint network among the various elements of the system. This would achieve the technical conditions for providing an efficient service in educational documentation to the vast Italian users within reasonable time and with all due competence and uptodateness.

The Content and Phases of the Project

On the basis of the indications expressed in the constituting decree and the clarifications of the Presidents' Conference, the BDP has set in motion a number of projects involving other institutions. In these, its intention has been to interpret user needs which for some projects is represented by the IRRSAE, while for others it has been represented more generally by the universities and schools in all their various aspects.

The task of interpreting and analysing user needs has completely and exhaustively absorbed the few available resources of the documentation section of the institute. This aspect of the work can be considered one of the elements which best characterizes the work of the documents librarian as opposed to that of the librarian in general. In Italy, at least, it is an entirely new element.

The projects in the common phases of the documentary process, that is, collection, processing, circulation, were rigorously separated according to criteria determined by the objectives and the type of documentation.

Thus, two general project directions evolved: bibliographic type projects which have as their general objective the discovery of information from a wide database and in which documents have been catalogued, indexed and abstracted. The objective of the second type of project is the literature of the broad education processes and phenomena, e.g. in-service teacher training and experimentation. Since such projects must assist qualitative analysis, they are minimally filtered, synthesized and codified by the researcher. It is evident that this distinction has a scientific importance as well as organizational weight since there is a diversity of software needed for the two types of projects and the problems that arise at the level of processing, circulation and utilization of the information are also diverse.

Analysis of scholastic phenomena

BDP, interpreting the needs of IRRSAE in this initial phase, launched the idea of building a database on the inservice teacher training courses for teaching personnel at every level. This proposal was immediately agreed upon by many organizations.

The material was gathered by the IRRSAE, each working in its own territory but keeping in mind all other possible sources.

An extensive resource file, 21 paragraphs, was compiled by a committee composed of IRRSAE experts on teacher training and documentalists, to collect information on the courses run by schools, (12,000 a year) and the less numerous but still interesting experiences, for the quality of content, set up by the IRRSAE, the National Ministry of Education, and professional groups and associations. The study used homogeneous criteria terminology and methodology and was conducted by research groups which had access to the original texts at the IRRSAE. The processing of these materials once they had been acquired, catalogued and classified at BDP, has been accomplished with the utmost « respect » for the original contents. Codices and abstracts were not provided except in some fields and for certain information that was essentially biographical in order to permit, at most, a qualitative analysis of the phenomenon in its various components.

Thus the compilers faithfully included in some open fields of the file, information useful for this kind of qualitative analysis — for example — the purpose and objectives of a course, possible developments, its theme, the programme and its parts, teaching methods for the course, kinds of testing to be used etc.

There are many ways of interpreting this material and the data base that has been created allows the possibility for interpretations that could be very interesting from a qualitative point of view. The project, however, still needs further research especially in the area of software. A programme (or « package »), suitable for this kind of analysis is not available at present, although in Italy there is some interesting work being done on text analysis and the meaning of terms in the literary context of a document. The data base available which refers to the 1981 courses, uses Stairs software. This, while it permits a vast series of possible combinations among Boolean logic operators to accomplish sufficiently adequate and deepened research and, for the available Browse function and similar, to organize, re-compose and re-order a document, is not adequate for the types of analysis that these files can make available.

A single example is sufficient to illustrate this — to study how certain themes, and therefore certain terms, have passed from pedagogical research to educational practice, Stairs in practice can only offer a list of these terms and their occurrences which it extracts from the dictionary it created which programmed. It can also offer the possibility of grouping paragraphs and documents and so does permit a degree of analysis impossible up to now. However this is still not sufficient in relation to all the possible interpretations, in the open fields and more in general using data bases set up with these criteria.

For the documentation of macrophenomena we can set up studies and qualitative research and also furnish precise instruments for selecting and aggregating data. These, however are still inadequate for the capability of this kind of data base.

It seems that the only possible way is to develop a more specific, parallel and autonomous software programme designed with specific user needs in mind. It must also bear in mind the resource offered by the documentation collections and the pedagogic debate on these same themes.

We must also find room in the general direction of the analysis of macrophenomena, for the project on the various experiments, research and didactic method innovation which are in the Italian educational system today.

This is documentation which, as I mentioned in my introductory remarks, rarely makes newspaper headlines, but which is nonetheless extremely important to education in general. A research file was recently compiled on these themes with contribution from Ministry education personnel.

Of course, what we have here is just the first version which has still to be tested and which is destined to gather only part of the huge volume of documentation in the equally vas areas of experiment, research and didactic innovation. The « Threshold » for the acceptance of materials for inclusion in this data base is the approval of the various staffs and this offers a precise legal reference.

However, since the objective even here is an attempt to understand reality as whole, this first data base will be followed by two others which will consider the projects which were presented for approval and did not receive it and the even vaster area of the experiments conducted with varying degrees of scientific methodology by individual teachers. This last resource is destined inevitably to escape analysis, or more basically, to remain mostly unknown and yet it represents a documentation of extreme interest for the school.

I believe that it would be a very important qualitative step forward for the entire Italian scholastic system if it were possible to have these materials available; if we could single out experiments being done in specific areas and thus create a circular movement of this information between those involved at various levels in the effort of educational innovation. This kind of project, which is still in its initial stage, requires the organization of files not only similar to that used in teacher training documentation and phenomenal analysis, but more specifically the possibility of collecting and making available the original documents produced by or utilized in the experiments.

The problem of making these materials available quickly and at a low cost can be solved by the use of microfiches. These have already been used in other documentary systems. They can generate photocopies and also solve the space problem since the material involved in our kinds of projects would be quite large.

Bibliographic Projects

Bibliographic projects, in general, are on a sounder footing because they benefit from the research done in this area in other countries. These projects deal with documentation by using abstracts and generally set out to provide complete, objective and rapid answers. If we compare these projects with the others already discussed, we can discover four main characteristics:

a) their object is to locate documents with precision and avoid anything that can be defined as « noise » (distracting elements) in an homogeneous database, i.e. a file with both open and closed fields and limited variables;

b) users are not limited and thus the limitation of access (privacy) does not usually occur. In fact, wide circulation of the materials is generally sought;

c) the processing that the original document receives is very detailed and goes from indexing operations to abstracting in a sequence that differs little from one file and another and which is reinforced by worldwide experience;

d) available software packages are sufficient for the needs of most users or, at most, require minor readjustment. The largest and most interesting project of this kind organized by BDP deals with the publications, books and articles published in Italy in the field of education sciences.

Since it is not possible to centralise projects of this kind, the ideal organizational model is star-shaped so that each peripheral centre is specialized in a certain area and inputs the central data bank. This data bank is responsible for the creation and upkeep of the data base as well as for the re-distribution and dissemination of the information both through the peripheral centres and directly by on-line services.

Here in Italy we have not completely resolved the problem of how to define and assign the areas to interest among the peripheral centres in order to mirror varying cultural situations as well as the epistemological levels of the individual disciplines.

Recourse to a thesaurus is inevitable when we are dealing with an original documentation. This is especially so when we need to bear in mind the different types of possible user groups, the various levels of dissemination in an effort to avoid « noise » as much as possible and to target the research as accurately as possible. Here, too, definitive solutions must be based on and preceeded by a period of experimentation. A possible guideline could be that of memorizing the texts of articles within a specific field and obtaining a listing of the terms by frequency of use. The table of terms thus obtained and divided by discipline, could then be subjected to a thorough comparison with other thesauri in use today in order to make decisions that could have important ramifications.

Technical Aspects

I will not devote much time to these technical aspects since I have already mentioned some of them in earlier sections of this paper. At present BDP uses *Stairs* which is, I believe, one of the software packages most commonly used in documentation. I have already mentioned its limitation for the analysis of phemonena and the qualitative analysis of documents distinguished by open fields. As far as documentation management in general is concerned, its greatest drawbacks are the impossibility of on-line update of the data base and the impossibility of « personalizing the printed materials ».

BDP intends to overcome these limitations in time by gradually submitting parts of its archives to the software developed by UNESCO in Paris, the ISIS. Since this has not been fully experimented with in Italy, it presents some unknown elements.

The structure of the documentation network which IRRSAE is setting up has required the choice of a computer and centralized data bank reserved for this documentation and based on a commonly used and proven model. This need became obvious both from the volume of the data, the amount of work to be done and the number of projects in process.

The memory load of the operational systems and specific programmes, requires a middle power computer. These computers must be reserved for documentation purposes if they are to be able to maintain an interactive network with a data volume already over 400000 bytes just for the BDP archives. It should be remembered that this project has only been in operation for a few months!

The multipoint network will permit new links within this year. This will simplify the input operations a great deal and will make the documentation available on-line at regional capitals.

School Libraries - Centres for Educational Documentation

Naturally, when we set up the project for the educational documentation system, we kept in mind the relationship that must exist between libraries in general and school libraries in particular.

It is now practically taken for granted in more technically advanced societes, that the traditional library responds less and less to actual needs. This is equally true in the specific and relatively limited field of school libraries. School libraries, though housing large collections (often fragmented and scattered), lead a difficult existence. Often they are reduced to being simple deposits. Sometimes they are unused or closed.

There has been little effort to coordinate these libraries in an effort to reduce waste. Nor has there been any effort to use the small financial resources for these libraries in a more rational way. There is always the risk that while on the one hand the pedagogic documentation network is being organized with advanced technology, the libraries themselves are being maintained and restructured along traditional lines. I feel that it is important to stress from the outset, the library's role as a cultural pace setter in the school. Hence the need for close collaboration between all documentation systems.

The formation of the documentation network makes it possible to realize today the kind of collaboration that is urgently needed in the school library using the structures and techniques already available. This collaboration will be apart from such obvious areas as cataloguing criteria, common acquisitions policy, coordination of resources on a national basis, interlibrary loan procedures. At the same time, the use of available technical resources would free staff from administrative details which tend to absorb more and more of the available resources, librarians, thus freed will be able to be used in the process of reinserting the library in the everyday life of educational practice giving both a place and a function in the educational programme.

It would be a serious error to confine the school library to the narrow area of library science field of processing and of organizing library materials. User needs, which must also be reeducated in the use of these new resources, demand that we make a qualitative leap forward so that the library is seen as part of the general informational documentation system which now makes full use of all advanced technologies.

Workshop Sessions
Final Documents

GROUP A

The methodology of the collection, organization and utilization of Educational Documentation

The theme assigned to the study group which I present here today was to consider the methodological problems of collecting, organizing and disseminating documentary information. The results of our labours have been complex and interesting. I must limit myself here to reporting our main conclusions and I must excuse myself in advance for any omissions. Such that there are, have been unintentional. I hope that they will, nonetheless, be brought to my attention.

But to come to the theme of our discussions — to begin with a fundamental fact: everyone involved in the field of education seems to agree with the need for an efficient document system capable of informing and being informed of everything at every level, in different institutions though with diverse objectives and modalities. At the same time, everyone seems to be aware of the difficulties encountered when it is a matter of passing from theoretical affirmation to concrete realization.

Producers of documentary material are many — people and institutions involved in the field of education. Naturally the principal protagonist is the school, and then the universities, research centres, professional associations, local institutions and organizations and so on. In all, a fragmented universe which together forms the resources indispensable to those desiring exhaustive information.

The creation of a catalogue of these resources has emerged as the prime need in the current debate. Without it, progress is seen to be impossible. Once this first need has been defined, attention can then be turned towards the problem of who can collect documentations. Since the majority of those present in the group were teachers, the accent was placed largely on school libraries. In these times there is much talk of school libraries but the school library still lacks any recognized status. In other countries it has this status; in fact, the title of librarian is no longer used and has been replaced by that of Information Specialist. A title that indicates a far wider function and a much more varied activity.

The school librarian, for we continue to use this title, was considered as the first link in a chain and therefore a position whose specific preparation demanded the utmost care and attention. His/her function as a stimulating element and support element within the school, promoting research and innovation, makes him/her automatically the prime reference point for the collection of materials produced by the schools. Since the librarian is the person who responds to the informational needs of the teachers, he/she manifests, directs, suggests, and makes available knowledge and information.

This is a large undertaking for the school librarian and our discussion on this point was marked by many perplexities. In the end, the view expressed here prevailed. It was suggested that the course content of school librarian training programmes should take these specific needs into account.

With reference to training programmes, the need to establish specific courses in documentary techniques was brought up a number of times during our discussions. This training should be available not only to those who work at the district level, which was seen as the first meaningful operational level within a given territory and is responsible for collecting and circulating information, but should also be available to IRRSAE personnel.

The flow of information begins in a territory in all its various expressions, then through the districts, it passes to the IRRSAE to arrive, ultimately, at the BDP computer which then programmes this material and then makes it generally available as required. In other words, the computer allows us to provide personalized information according to individual need. But in order to have all this available, it is necessry that the documentary materials we want to make generally available be possible to compare, that is, be homogeneous in language and form.

This last problem, in particular, was the subject of many interventions and much discussion. An important item was the process of « language clarification » — an effort to better communication by improving the quality and the precision of pedagogic language. In this regard, special care was recommended in the training of those whose task it is to keypunch the material to be put into the computer.

A final point — information must be made available at every level, macro, micro, and mezo. The same channels which were singled out for input are indispensable for output, that is, the IRRSAE and the school libraries, in order to be able to respond to every request. But even more importantly, we must stimulate interest so that gradually a culture based on information is formed.

It was suggested that in addition to direct reply from the computer or terminal, information could also be provided to the user in paper format — thematic bibliographies, abstracts, analyses of products, practical information, indications of experience, the possibility of accessing original materials.

In conclusion — a « thankyou » to our foreign participants who were kind enough to offer us their experience and who suggested a number of solutions for operational problems that have loomed large in our discussions. Since they have been working in this field for some time already, our difficulties of today are their difficulties of yesterday. To day they have different problems. If we have realized through them that the problems to be solved are infinite, their very experience conforts us and encourages us to continue along the road that we consider to be the right one in the certainty that we are performing « a service for the Italian school » and that we are creating an important instrument for its renewal.

FIORA IMBERCIADORI POLITO

GROUP B

Management methodology for Documentary materials

The legislator has been aware of the need to set up educational documentation systems in Italy since 1974. But only now such a system takes its first hesitant steps here while other countries have already had numerous and interesting developments. International organizations have also recommended such systems.

To project and set up a documentation network in Italy demands that the various sources of information be carefully analysed and grouped according to function. A similar procedure should be used with reference to the users of the services which can be conveniently divided into three main categories:

— Operators - those have to make decisions based on available documentation;
— Researchers - the world of university and scientific research;
— Teachers/Scholastic Personnel.

It will be necessary to define those who will use the service provided and determine whether the service will be adequate. The enabling decree which established the Regional Institutes, BDP, and CEDE insisted on the term « documentation » in its definition of the mansions of the various organizations. While this shows the care and attention of the legislator, it has also caused quite a number of problems in the initial set-up phases of the Institutes.

The document approved unanimously by the Conference of Presidents in July 1981, underlines the need to consider the Institutes in relation to their documentation duties as « an integrated system of organizations which jointly, each in its own sphere, combine to common ends ». In this overall picture, BDP whose specific function is that of documentation, provides services according to the needs of the entire system.

This policy statement has permitted, once the ground has been cleared of problems of authority, the organization of a number of projects which reflected an analysis of the needs of the first level users, the operators.

Two projects were proposed to the IRRSAE which in the initial stages of the Institutes themselves, seemed consonant with what should be known in order to overcome the gap between being aware of the precise conformation of a problem and knowing analytically the nature of the scholastic phenomena behind the problem. This, to avoid the mistake of poorly documented general criticism.

Of course, the intention was also to avoid legislative intervention which has not always been timely and efficacious.

The first project, which according to 1981 data has already been completed, was to deal with the in-service training of teaching personnel. The second was to deal with didactico-methodological experiment and innovation at various levels in the Italian schools.

A system was formed through a series of agreements that now bind the regional Institutes and BDP. This is exactly what the document of the Conference of Presidents had suggested. It guarantees every phase and development of the projects through a work group set up exclusively for this purpose. This decision is both a significant factor and a qualifying element. Democratic management of information is not just a generic purpose but a definite choice made by the IRRSAE, BDP, and CEDE. This choice has important consequences, including some of a technical nature but now is not the time to discuss this further.

The objective of both projects is to perform not just statistical or quantitative analysis but rather qualitative analysis that will allow the form of the phenomena to be investigated. The techniques are many. A centralized data base has been created. Its structure is starshaped as is usual in a system that looks to periferal use based on a central archive. Still, the techniques of information science cannot solve all the problems by themselves. A different kind of solution will have to be sought for the « object archives » — those that offer the possibility of direct access and consultation with the source material.

The experience of BIE and ERIC in this matter have reinforced the choice of microfiches as the support-tool capable of guaranteeing better than any other system, because of its low cost, the circulation and dissemination of information.

The technical choice of a centralized computer dedicated to documentation but capable of many other implementations, as well as for terminals at the IRRSAE capable of intercommunicating, has been completed by the decision of the last Conference to set up a multipoint network between the various Institutes. These decisions have made it possible to have in Italy the principal documentary data bases, ERIC and BIE.

The network has come this far but there are still a number of problems. From a technical point of view, it is still necessary to study:

— the development of software packages that permit qualitatively deeper interpretations.

— the development of other means of circulating the information, e.g. printed reports on the state of research in a given area; thematic bibliographies; material directed to precise publics.

From a more political point of view, a number of contradictions in the constituting decree and a number of more general problems were brought to light. These were also underlined by the experiences of a number of foreign participants:

— school libraries should be considered as a sub-system of the general information system. To restrict them to the relatively limited area of library problematics could be a serious error.

— the professional status of the documents librarian as the interpreter of user needs. That this is a profession in its own right is shown by the fact that it has its own proper terminology, problematic and methodology of collection, elaboration, and circulation of information. In the other centres and in the pedagogic documentation networks, the profession of documents librarian has, within its own sphere, differences of certain consistency.

In Italy, however, we have the strange figure of the « seconded » teacher, that is, a teacher appointed to perform documentary librarianship tasks. Once such a teacher has been trained in this new profession and for this some years are necessary, it is possible that he/she will return to teaching and cause some damage to the school since there is a radical difference between the work of a teacher and that of a documents librarian. Separation from the school ambient can only harm the teacher through loss of professional qualification.

The same applies in even greater degree to projects heads and section heads.

GIOVANNI BIONDI

Hon. Guido Bodrato

Concluding Speech

Minister of Education

It is with particular pleasure that I address these words of greetings and thanks to the President of the Educational Documentation Library for this most important event, not only in the relatively short history of the Educational Documentation Library but also, as he himself noted this morning, in this difficult and demanding beginning phase of the Regional Institutes of research. My greetings also to all the authorities present here today: to the Prefect, to local authority representatives, to the Superintendent for Education, to the representatives of the IRRSAE, to the teaching personnel and in a special way because of the important contribution they have made to this meeting, to the experts from other countries here present. The help they have brought here will shorten our road and help us avoid errors that otherwise our inexperience could not avoid. The two speakers who have synthetised the problems that emerged in your group discussions, have already noted the fundamental request that has been expressed in this international meeting. This demand is the same that produced the decision we arrived at in 1973-74, even though experience has since shown us that the legislative provisions made then were not sufficient for the problems that have had to be dealt with. The fundamental demand, then, is that these structures, these institutions should be considered as decisive elements in a qualification policy for our school system. We all know that we are going through a particular phase in the Italian school system which is charactherized both by the social phenomenon of school population falling and the renewed interest for school reforms. Discussing on any of these points, without focusing the teaching quality problems, besides the administrative and trade-union ones, would be a deep error. We don't want to make it, but we 'ld certainly make the error if meetings such as this and the IRRSAE activities did not urge us to consider the importance of educational research, of innovations and experiments connected to reforms, comparisons and controls. Documentation is an essential phase in the change process, as we think it necessary to transfer the research and innovation results into the teacher in-service training.

Teacher in-service training is an enourmous phenomenon in the italian panorama: it involves millions of teachers and students. Therefore it needs to be programmed with great attention, and compels us to avoid improvisations and structural damages, difficult to recover. The care for teaching and italian school system quality, at a concrete level, requires the emphasizing of IRRSAE, BDP, CEDE. They were stablished in 1974, I'ld say, a little bit all of a sudden, with all the limits and inaccuracies of the decisions, deemed necessary, but not well prepared. President Bortoli has just mentioned the recent meeting held in Bologna, with the participation of the delegates of the Ministry, BDP, IRRSAE and CEDE, to analyze the situation in a more attentive way. The intention was to propose the change or integration of Decree 419, to permit the Institutes to function appropriately. The Minister himself finds some difficulties facing laws which are vague and ambiguous, innovation resistances, distrust for the central administrative power. But I believe that, in recent times, a common design has come out. A greater disposal to face the problem has emerged and some concrete indications have been elaborated. And even the problem of the personnel for IRRSAE, BDP, CEDE seems near to be solved.

But let's go back to documentation, assigned to the Library as one of its qualifying competencies since July 1981, and this was even more specified, if I am not mistaken, in March 1982 at the last conference of the IRRSAE Presidents. It seems to me that we should underline, above all, certain characteristics of this initiative, of this function that has been assigned to BDP.

In the first place, we are talking about a public information system that functions at a national level and which has the potential usership mentioned previously together with the other possible links and access to international documentary resources. All these elements give such a system considerable importance in our country. We must not underestimate this side of the problem. Underlining it makes us consider not only the relevance of the obligations assumed, but also the objectives of our school policies and, in a more general sense, our cultural policies that can be pursued with this kind of public system much more efficaciously than in the past.

In the second place, I believe that we must underline the fact that one thus defines a democratically administered information system which should be able to reduce the danger of having informational systems that acquire positions of power in the social fields, or in this case, the cultural or scholastic fields.

The polemics of past years have frequently evidenced this danger.

The impact of the modern information system on contemporary society, the enormous potentiality of such systems, the ever-present possibility that they could become real « hidden » powers, beyond control, has been much discussed and will continue to be the subject of discussion. It seems to me, however, that, in the context of our present discussions, this danger does not exist because of the solution we have adopted — the democratic administration of the information system in itself guarantees against the danger. Here too, of course, we have an example that can be discussed and imitated whenever the problem of information is discussed in other contexts.

Finally, there is a third comment that should be made concerning the close relationship between this information system and the Italian school system. What is the relationship between the information system and the service to schools which will thus be established?

Mention was made of a problem which I must admit is, at present, particularly delicate, viz., the relationship between the information system and the school libraries. You are aware that the Ministry of Education has organised a number of in-service training projects. The purpose of these was, on the one hand to make the presence of libraries most vital in the scholastic system by encouraging a wider and more contemporary use of the library by both students and schools. On the other hand, we are looking for ways, and here the discussion is not limited to libraries, of making positive use of the excess of qualified teaching personnel which has been caused by our falling school population. A number of projects are being conducted in collaboration with the Ministry for Culture. Naturally we must try to set up a realistic situation, within valid didactic possibilities, that avoids creating fictitious positions. It is not our intention to create juridical figures outside what should be the reality of the objectives of Italian education. Thus we do not intend to cover up the under-employement of teachers by these means. Rather we intend to integrate these new elements in an overall design for a contemporary school system. In this sense, the problem has quite correctly been focused on certain, definite people who have a problem to overcome. People who have the problem of only occasional employment; who should in time be able to recoup an adeguate professional training rather than allowing it to go to waste and frequently end up in roles quite distinct from that of a teacher. All this poses a very real problem that demands a solution but this very solution itself poses legislative and administrative problems very demanding in political terms.

However, this very urgent problem should not be allowed to remain unanswered. For my part I will keep these suggestions in mind though I believe that the general programme of utilization of school libraries proposed by the Ministry of Education goes quantitatively quite beyond the kind of relationship between BDP and school libraries that has been discussed here and which was already metioned. I have insisted on this question only because it is the kind of problem which allows us to appreciate the problems in organization and administrative (and even cultural) change in the Italian school in the new situations that are evolving. In particular, part of the new situation is evolving because of the decisions which have been taken by BDP and which you have discussed in these meetings. The results which have been achieved and which we all desired, could not have come about had there not been a certain degree of change in the Italian school with regard to information needs.

I think that I can end by returning to that question which has been at the centre of your discussion. First the BDP President and later various other speakers have reminded us that this information system does not have statistical objectives. It is important to have archives at one's disposal that are easy to consult. It is very important to have at one's disposal a complete outline of information on pedagogic problems. But it is necessary above all else to be able to activate this documentation, to be able to establish by means of the new situations that have arisen, a new thrust in the diffusion of information and thus achieve a leap in quality in the schools of our country.

I think that we must organise projects that are not just window-dressing but stimulation directed towards our entire school establishment, precisely owing to its size and owing to the fact that we can never be satisfied to know that within it there are some very advanced areas as our task is mainly to deal with the average and the backward and it is towards these that we must direct stimulating projects, creating links that will help them to overcome inertia and push to enter a different cycle and thus regain rapidly any time that has been lost.

This is why I have accepted the invitation of the BDP President to participate in this closing day of what has certainly been a demanding meeting. I am here to guarantee for all of you, the attention, the intense interest of the Ministry of Education in the work, the debates, the suggestions of this meeting. I do not deceive myself that they can easily be accepted into our administrative systems and our schools. A special kind of will, a high degree of patience will be necessary on the part of those who like you, are pioneers in this field. But in a year much progress has been made. The work that has already been done testifies to the seriousness of your commitment which is such that it guarantees that this programme will be pursued in the future with the same constancy and enthusiasm, with the same professional preparation that have marked it up to now

For this reason, once again I offer you not only my greetings but also my heartfelt thanks. I know that I can do this also in the name of the entire Italian scholastic establishment not only because of the political office I hold but precisely because I know that this feeling is universal in our schools and among our teachers.

PROGRAMMA

Lunedì 31 maggio

Ore 17 - Inaugurazione. Palazzo Vecchio - Salone dei Dugento.

Saluto di Renato Bortoli
Presidente della Biblioteca di Documentazione Pedagogica.

Saluto di Elio Gabbuggiani
Sindaco di Firenze.

Saluto di Mario Leone
Presidente della Giunta Regionale Toscana.

Ore 17,45 - Introduzione: *La documentazione: scienza tra le scienze* – Paolo Bisogno, Consiglio Nazionale delle Ricerche.

Martedì 1 giugno - « Villa La Loggia »

Ore 9 - Introduzione ai lavori. Orio Onori, Università di Firenze.

Ore 9,15 - *The present and the future of the international network for educational information - I.N.E.D.* – Aida M. Furtado, Bureau International d'Education, Genève.

Ore 10 - *Eudised a decentralised system with a common thesaurus* – W. F. De Regt, Conseil de l'Europe, Strasbourg.

Ore 10,45 - Intervallo

Ore 11 - Dibattito
Presiede: Mauro Laeng, Università di Roma.

Ore 11,45 - Visita guidata alla Biblioteca di Documentazione Pedagogica.

Ore 15 - *Information et éducation, situation actuelle et perspectives* – SIMONE PISSARRO, Centre National de Documentation Pédagogique, Paris.

Ore 15,45 - *Information on actual educational research in Sweden* – ELIN EKMAN, National Library for Psychology and Education, Stockholm.

Ore 16,30 - Intervallo

Ore 16,45 - *Educational policy documentation in Netherlands* – W. F. DE REGT, Central Documentation Department, The Hague.

Ore 17,30 - *Educational documentation in the United Kingdom, developments and research* – ANTHONY GWILLIAM, National Foundation for Educational Research in England and Wales, Slough.

Ore 18,15 - Dibattito
Presiede: RAFFAELE LA PORTA, Università di Roma.

Mercoledì 2 giugno - « Villa La Loggia »

Ore 9 - *Development and current status of the Educational Resources Information Center - ERIC. A model bibliographical system covering the literature of education in the United States* – CHARLES HOOVER - TED BRANDHORST, Educational Resources Information Center, Washington.

Ore 10,30 - Intervallo

Ore 10,45 - *Un servizio per la Scuola Italiana* – GIOVANNI BIONDI, Biblioteca di Documentazione Pedagogica, Firenze.

Ore 11,30 - Dibattito

Presiede: Lucio Lombardo Radice, Università di Roma.

Pomeriggio libero.

Giovedì 3 giugno - « Villa La Loggia »

Ore 9 - Gruppi di Lavoro. Presentazione delle Comunicazioni.

Gruppo di lavoro A: *Metodologia di raccolta, organizzazione e utilizzazione della documentazione pedagogica.*
Moderatore: Fiora Imberciadori, Biblioteca di Documentazione Pedagogica.

Gruppo di lavoro B: *Metodologia di gestione dei materiali.*
Moderatore: Giovanni Biondi, Biblioteca di Documentazione Pedagogica.

Ore 13 - Colazione di lavoro.

Ore 15 - Continuazione dei lavori di gruppo.

Venerdì 4 giugno - « Villa La Loggia »

È prevista la partecipazione di Guido Bodrato, Ministro della Pubblica Istruzione.

Ore 9 - Presentazione delle Relazioni dei Gruppi di lavoro.

Ore 10,30 - Intervallo.

Ore 10,45 - Conclusioni.
Presiede: Candido Sitia, Centro ricerche didattiche « Ugo Morin ».

Ore 11,30 - Drink di saluto offerto dalla Biblioteca di Documentazione Pedagogica.

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